U. S. DEPARTMENT OF AGRICULTURE
WEATHER BUREAU

A MANUAL FOR OBSERVERS
IN
CLIMATOLOGY AND EVAPORATION

BY

FRANK HAGAR BIGELOW
PROFESSOR OF METEOROLOGY

W. B. No. 409

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Prepared under the direction of WILLIS L. MOORE,
Chief of U. S. Weather Bureau,

By

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LETTER OF TRANSMITTAL.

UNITED STATES DEPARTMENT OF AGRICULTURE,
WEATHER BUREAU, OFFICE OF THE CHIEF,
Washington, January 18, 1909.

SIR: I have the honor to transmit herewith a Manual on Climatology and Evaporation, by Prof. Frank H. Bigelow, of the Weather Bureau, and recommend that it be published as a bulletin of the Weather Bureau.

This work is the result of our experience with regard to the observations in the West inaugurated for the development of the water resources branch of the Weather Bureau, and it is adapted to observers of the cooperative bureaus. The remarks on climatology are such as will enable observers to classify the problem of snow and rainfall in the Sierras and Rocky Mountains according to the requirements of engineers. The part of the Manual relating to evaporation contains an account of the formula now under trial, the methods of observation, and the tables necessary for executing the computations. The work will be greatly facilitated by being able to place these instructions in the hands of all observers so that they may cooperate upon the same plan. With these tables the computations on evaporation have been made exceedingly simple, and it is thought that our observers will be able to use them successfully and to the great advantage of our research.

Very respectfully,

(Signed) WILLIS L. MOORE,
Chief U. S. Weather Bureau.

Approved:
(Signed) JAMES WILSON,
Secretary of Agriculture.

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A MANUAL FOR OBSERVERS IN CLIMATOLOGY AND EVAPORATION.

CHAPTER 1.

INTRODUCTION.

1. The Plan of Inter-Bureau Cooperation, and the U. S. Weather Bureau Instructions No. 76, July 1, 1908.

Climatology is generally understood to comprise simple observations of temperature, precipitation, and wind direction, taken at numerous places to determine the climate of a large country and its subordinate localities. In the United States the observations are made as simple as possible in order that cooperative observers may be secured to assist the regular officials of the U. S. Weather Bureau. The instruments used are the maximum and minimum thermometers, the rain and snow gages, and the wind vane for the prevailing direction of the wind. The service was primarily organized in the United States in the interest of agriculture, and consequently the Atlantic States, the central valleys, and the Pacific States, were first developed. It has been gradually extended into the Rocky Mountain districts, but there still remain large areas where no suitable observations have been secured. The recent rapid growth of the requests for information regarding water resources, as a result of the numerous irrigation projects, has, however, brought a special demand for a knowledge of the amount of rain and snow available in the mountains and valleys near the headwaters of the streams used for supplying the reservoirs and canals in the semiarid districts. On account of the lack of permanent residents in the remote mountain districts it is evidently an especially difficult matter to secure the necessary observations in these regions. Since it is the snowfall accumulated in drifts in the mountain ravines or packed in forests which is the real source of the water supply used for irrigation, it is necessary to concentrate attention upon the amount of snowfall in the high levels of the mountains of the West. It has therefore been thought proper to extend the operation of the Weather Bureau so as to include as far as practicable the cooperation of other bureaus of the Government more or less interested in securing and using these climatological data. Accordingly a plan of inter-bureau cooperation has been organized, including the U. S. Weather Bureau, U. S. Forest Service, and U. S. Bureau of Plant Industry, of the Department of

Agriculture, and the Reclamation Service and the Water Resources Branch of the Geological Survey, of the Interior Department. The plan of cooperation finally adopted after consultation has been approved by the chiefs of the several bureaus and by the Honorable Secretaries of the Department of Agriculture and Interior Department. A copy of instructions No. 76, issued by the U. S. Weather Bureau, dated Washington, D. C., July 1, 1908, is added for the information of all concerned.

INSTRUCTIONS No. 76.

U. S. DEPARTMENT OF AGRICULTURE.

WEATHER BUREAU,
Washington, D. C., July 1, 1908.

The following plan of cooperation between the bureaus named therein, which has been approved by the chiefs of the said bureaus and by the Honorable Secretaries of the Interior Department and the Department of Agriculture, is published for the information and guidance of officials of the Weather Bureau:

THE WATER RESOURCES SERVICE OF THE WEATHER BUREAU FOR THE SEMIARID REGION.

1. The Water Resources Service of the Weather Bureau for the semiarid region is designed to cover a new series of climatological observations and researches; (*a*) on the supply of water derived from the snow and rainfall at high altitudes in the mountains of the West for the rivers and reservoirs of the lower levels; (*b*) on the study of the evaporation of water from lakes and storage basins; (*c*) on the meteorological problems of the influence of forests on the conservation of water and the protection of arable lands; (*d*) on the meteorological conditions necessary for the growth of certain valuable plants, as the date and fig, in the irrigated desert regions.

2. The operations of this service will cover the States of Washington, Montana, North Dakota, South Dakota, Nebraska, Wyoming, Idaho, Oregon, California, Nevada, Utah, Colorado, New Mexico, and Arizona. While the control and supervision of this work will be exercised strictly by the Weather Bureau, it is evident that its prosecution will be greatly facilitated by cooperation with the following bureaus of the Government:

The Forest Service of the Department of Agriculture.

The Bureau of Plant Industry of the Department of Agriculture.

The Reclamation Service of the Interior Department.

The Water Resources Branch of the Geological Survey of the Interior Department.

3. In order to carry out this plan of cooperation the following organization is established. The Water Resources Service is placed under the supervision of the Climatological Division, which will have charge of the following duties:

(*a*) The preparation of the instructions regarding the method of making the observations, the distribution and installation of the instruments and apparatus, the collection of the reports, the computation and discussion of the data, and the publication of the results for the use of the cooperating bureaus and the public generally.

(*b*) The correspondence between the section directors and the central office regarding the work specified above, and that between officials of the bureaus of the government service mentioned and the Weather Bureau, all subject to the approval of the Chief of the Weather Bureau.

THE SUPPLY OF INSTRUMENTS AND OTHER APPARATUS.

4. The Weather Bureau will furnish the apparatus required for the several researches.

(*a*) The rain gages and snow apparatus for the mountain stations at high altitudes.

(*b*) The evaporation pans, thermometers, psychrometers, anemometers, wind vanes, water gages, and other necessary apparatus, as breakwaters, stands, and shelters, for evaporation studies.

(*c*) The self-registering instruments and other apparatus of a refined order, required for the strictly scientific problems on the action of forests upon water resources, besides the ordinary instruments mentioned in section (*b*) for a limited number of stations of the Forest Service, but only when continuously in charge of an approved meteorologist.

(*d*) The thermometers, psychrometers, and evaporation instruments, and such other apparatus as may be necessary for testing the availability of certain localities, limited in area, for the growth of special valuable plants.

THE SELECTION AND SUPERVISION OF MOUNTAIN OBSERVERS AND THE INSTALLATION OF THE INSTRUMENTS.

5. (*a*) The section directors of the Weather Bureau will use all the means at their disposal to secure in their respective districts competent observers for rain and snowfall in the remote districts of the mountains, especially in the snow fields where the melting snows feed the reservoirs of the Reclamation Service and the irrigation projects, whether governmental or private, throughout the semiarid region of the West. They will forward to the central office a report showing the names of such prospective observers, a description of their immediate surroundings, whether bleak, in the forests, or in a common, open country, the altitude of the station, the experience of the observer with the use of instruments, ability to read, write, and to fill out accurate reports, together with remarks on the available means for the regular forwarding of the observations. This report will largely determine the action of the office in regard to authorizing the issue of instruments to the observers. Proper blanks and forms on which to render the report will be furnished to the section directors. The observers supervised directly by the officials of the Weather Bureau will send their reports to the section directors in the usual manner.

(*b*) In case observers are secured by any of the cooperating bureaus, the procedure will be somewhat different. The cooperating bureau will submit a report substantially like that described in section (*a*) to the Chief of the Weather Bureau. A return will be made by the Weather Bureau to the bureau which forwarded the application, stating the places and persons that seem to be available for these observations. The cooperating bureau will advise its officials of the applicants accepted by the Weather Bureau, and these officials will be instructed to apply for the necessary apparatus at a convenient Weather Bureau station. The Chief of the Weather Bureau will instruct the section director to forward the required instruments and apparatus to an address supplied by the cooperating bureau most convenient for the supervisor in charge of any particular region.

(*c*) The official of the cooperating bureau who receives the instruments will give a memorandum receipt for them to the section director. He will distribute them to the individual observers, but will retain them on his property return, and be responsible to the section director for them. He will instruct the observer in the use of the instruments and the compiling of the report. The report will first be sent to the supervising official for inspection, and will be forwarded by him to the section director issuing the instruments, to be used in the usual manner before transmitting to the central office. In case of the breakage, destruction, or loss of the instruments, they will be returned, or the fact reported to the section center by the supervisor, and then removed from his property return in the usual way.

(*d*) The section directors of the Weather Bureau and the officials of the cooperating bureaus will confer freely on these subjects as occasion offers, in any of the States included in this programme.

(*e*) The section directors and all other officials of the Weather Bureau will give the necessary instruction and information regarding all meteorological matters required by officials not connected with the Weather Bureau, but cooperating in these projects, which may be needed by them in the performance of their duties of selecting the observers and installing the apparatus at any selected stations.

(*f*) The chiefs of the cooperating bureaus will be requested to certify to the Chief of the Weather Bureau the names and official standing of those inspectors, agents, and observers who are designated by them to take part in these cooperative observations.

(*g*) Inspections should be made of the snowfall observers as frequently as convenient, without expense to the Weather Bureau, after the installation of the instruments.

(*h*) For the evaporation stations, the special forest research stations, and the plant industry stations, the official procedure regarding the selection of observers, the installation of instruments, the transmission of reports, and the property returns, will be the same as for mountain observers, except that the issuance of instructions and the correspondence will generally be directly with the central office, and not through the section centers.

THE FISCAL REGULATIONS.

6. (*a*) The Weather Bureau agrees to furnish the instruments and apparatus required and approved, and provide for their installation.

(*b*) The Weather Bureau agrees to pay the traveling expenses incidental to the installation of the necessary meteorological instruments and apparatus, and the transportation of the apparatus from the Weather Bureau office of issue to the station selected and approved.

(*c*) The cooperating bureaus agree to pay the salaries of the officials of their respective bureaus designated to install and inspect the selected stations.

(*d*) Only such traveling and incidental expenses will be allowed to the cooperating officials as are concerned with the installation of the meteorological stations.

(*e*) The expenses incurred in connection with this cooperation shall be paid by the office that does the work. At the end of each quarter the various cooperating bureaus will present an itemized bill to the Weather Bureau for the amount incurred by the respective bureaus during that quarter, in carrying out the duties authorized. The cooperating bureaus will then be reimbursed by transfer of this amount in the Treasury.

COMPENSATION TO OBSERVERS FOR RECORDS OF RAIN AND SNOWFALL AT HIGH ELEVATIONS IN THE MOUNTAINS.

7. In view of the difficulty of obtaining reliable records of the daily amounts of rain and snowfall in the regions before mentioned, it has been decided to create a special class of observers for this purpose, to be designated "Mountain snowfall [a] observers," who shall receive a small compensation for their services, as distinguished from the observers living on the lower levels and in the agricultural districts where cooperating observers are readily secured. These observers will be paid not to exceed $10 a month, according to circumstances, for daily measurements of the rain and snow fall, recorded accurately according to the instructions, and reported regularly on the forms supplied by the Weather Bureau. The amount to be paid will be determined by the report of the official who installs the station. There are similar special observers under pay for the cotton region, corn and wheat region, sugar and rice region, and rivers, and the mountain snowfall observers will form another class. The inspectors are requested to be conservative in their recommendation of available observers, because the records must be accurately and continuously

[a] The original designation, "Mountain rainfall observers," since changed.

kept to be of value in meteorology. Unless the prospect for a fairly long series at a station is good, it will be undesirable to establish the station. After the station has been established, if it be found that temperature readings can be provided for without too much inconvenience and expense for the installation of instruments, action may be taken to that end.

Station regulations are amended to conform to the foregoing.

WILLIS L. MOORE,
Chief U. S. Weather Bureau.

The method of procedure here designated will govern the official actions of all persons involved, and its terms must be carefully complied with in order to fulfill the necessary legal requirements under which these instructions were authorized.

Generally speaking it is desirable to secure the services of persons living near the snow fields who are willing, for a small compensation, to assist the Government in making these important observations. The names of such persons and the necessary descriptive information regarding the locality will be placed upon Form No. 4017–Mis., of which a copy is appended. Form No. 4017–Mis. will be used for the application of all observers who are to receive a payment, and Form No. 4029–Mis. will be reserved for those cooperative observers who make the observations without payment. Observers receive a small compensation for corn and wheat, cotton, sugar and rice work, for the display of storm, river and flood warnings, for cranberry frosts, and for mountain snow and rain fall records.

FORM No. 4017—MIS.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

Description of Location, Topography, etc., of Mountain Stations Established in the Interest of the Water Resources Service of the Weather Bureau.

The Weather Bureau desires to secure many observations of precipitation and especially of the depth of snow on the ground in the mountains at the heads of the small streams that feed the great rivers, in order to determine the flow of water from these sources during the warm season. In order that the Bureau may have before it the necessary preliminary information, it is requested that the statements in connection with the following items be made as full as possible:

Name of proposed station..
County........................ Township........................ State..........................
Latitude.. Longitude..
Elevation of ground above sea level..
River system.. Tributary..

LOCAL TOPOGRAPHY.

Name of mountain (or mountain range)..
Trend of mountain range..
Location of station (on which side of mountain or range)..

Approximate elevation of station above valley..
Approximate distance to top of mountain..
Steepness of slope at station, moderate, precipitous.
Direction of steepest descent from station...
Brief description of topographical surroundings of proposed station...

FOREST CONDITIONS.

Above or below the timber line...
If in forest, conditions immediately surrounding the station (whether in uncleared forest, or in clearing, and approximate area of clearing)..
Can clearing be made in forest if none now exists at favorable site?..

AVAILABILITY OF STATION.

Opportunities for securing accurate average depths of snowfall (good or otherwise)........................
Available means for the regular forwarding of observations (mail, telephone, or telegraph—daily, weekly, or monthly)...
Portion of the year during which observations could be maintained..
Probability of observations being continued in case of removal of observer..................................
Names of persons in the immediate vicinity of station who could continue work during absence or sickness of regular observer ....
Proposed equipment of station ....
Character of reports to be rendered ....
Name of proposed observer ....
Post-Office address ....
Scope of education ....
Experience in reading and care of instruments, with reference to making trustworthy measurements and accurate reports ....
Birthplace ....
Legal residence................................... Congressional district.......................................
Date..............................

If the prospective observer is secured by a cooperative bureau this blank should be forwarded to the section director of the State in which the observations are to be made. The section directors for the several States will secure observers on their own initiative, using the same form. These reports are to be forwarded by the section director to the Washington office of the Weather Bureau for the approval of the chief of bureau, and the section director is required to add his recommendation on the availability of each observer. If the station and observer are authorized by the chief of bureau the section director will be requested to furnish the station with the necessary apparatus, and the observer will be placed upon the pay roll of the United States Weather Bureau in accordance with the rules of the Accounts Division. All observers under pay must be carried on the rolls of the Weather Bureau in order to comply with the specific regulations prescribed by Congress for the United States Department of Agriculture. In case

a station is authorized and placed under the supervision of a cooperative bureau the necessary expense of establishing the station will be paid by the cooperative bureau, which will render to the Weather Bureau an itemized account of the expense incurred, which amount will be reimbursed to the said bureau by the transfer of the necessary funds through the treasury. It is proposed to render the administration of this inter-bureau cooperation as liberal as is possible, while complying fully with the fiscal and other regulations prescribed by the various branches of the Government.

2. The Meteorological Cycle—Precipitation, Evaporation, and Condensation.

There is a great meteorological cycle in nature based upon the strict thermodynamic laws of physics which includes three great practical subjects, namely, evaporation, condensation, and precipitation. They are all concerned with the three processes through which the aqueous vapor of the atmosphere is incessantly passing. Evaporation consists in the elevation of aqueous vapor in an invisible state from water surfaces, whereby water returns to the atmosphere, and is transported to great distances from the place where the evaporation actually took place. Condensation consists in the change of the invisible aqueous vapor to water or to snow crystals, as the aqueous vapor is cooled to lower temperatures, while it rises to higher elevations above the surface or otherwise. Precipitation consists in the fall of aqueous vapor in the solid state as snow or the liquid state as water, under the force of gravitation as modified by the wind currents and the prevailing conditions of the air. Of course it is not possible to trace out the life history of any individual mass of aqueous vapor through these three great processes, and we can only practically study the effects in a rather unscientific way. The sum total, however, of the action of these three processes in the great cycle makes up climatology, which is the practical side of the matter to the majority of men.

The theory of condensation has been quite carefully worked out, and the laws by which aqueous vapor and the dry air as a mixture operate together are well known. If a certain volume of air contains a certain amount of aqueous vapor, both being at a given temperature, when this mixture is cooled the aqueous vapor will first pass into water, and if the lowering of the temperature is carried far enough the water will be changed into snow crystals. It will not be necessary to say more about this topic in this connection, but the reader is referred to the second volume of the Annual Report of the Chief of Weather Bureau for 1898–99, being a report on the international cloud observations by Prof. F. H. Bigelow, where the mathematical laws and the corresponding tables are to be found in Chapter X of that volume. Precipitation occurs as rain or snow according to the temperature.

If masses of aqueous vapor condense into water particles, and these unite into drops large enough for the force of gravity to drag them through the air and overcome its viscous tension, then the water will fall as rain. If the temperature is low enough it will fall as snow. The subject of rain drops and snow crystals has been frequently treated in the Monthly Weather Review, and reference is made to the following numbers: October and November, 1906, for Bigelow's laws of rain drops; August and December, 1907, for Bentley's studies on rain drops and rain drop phenomena; and the Annual Summaries of the Monthly Weather Review for 1902 and 1907, where beautiful photomicrographs of frost and ice crystals by Bentley have been collected.

The laws of evaporation are not yet well understood, although physicists have bestowed a large amount of labor upon this subject. A summary of the literature on evaporation is published in the Monthly Weather Review for June and September, 1908, to be continued in later numbers of the Review. Recently, in the summer of 1907, a series of observations were made by Prof. F. H. Bigelow, at Reno, Nev., in a search for the law of evaporation. An extensive campaign is being organized at the Salton Sea in southern California, and the Reclamation Service of the Interior Department at twelve of their projects, and the Water Resources Branch of the Geological Survey at four reservoirs east of the Mississippi River, have undertaken an extensive series of observations for the year 1909, when further necessary data will be secured. An account of the attempt to develop the law of evaporation of water over lakes and reservoirs in the United States can be found in the Monthly Weather Reviews for July, 1907, and February, 1908, and the Annual Summary for 1908. Certain formulas and tables are contained in this manual, which are intended to be used in the carrying on of this work in the problem of evaporation.

Chapter 2.

CLIMATOLOGY.

3. The General Problems of Precipitation of Rain and Snow in the Mountain Districts.

In preparing for a campaign in the Rocky Mountains and the Sierras of the Pacific States, which has in view the measurement of the amount of snow and rain available for water resources, it is important to keep in mind several broad features of the general problem. The snow is readily transported over the bare or unforested places of the mountains from place to place, and deposited in great drifts, especially in the ravines of the mountains and behind the shoulders of the ranges. The summits are apt to be swept bare while the hollows are more or less filled. The phenomena of snow drifting, therefore, assumes a very prominent place in mountain climatology. The snowfall in the forest regions of the mountains is much more uniform than it is in the open places. We may divide the mountain snowfall into three classes according to the topography and the action of the wind, namely: (1) The open country which is fairly level; (2) the forest areas, and (3) the drifted regions especially in the mountain ravines. It is not sufficient to measure the snowfall in a few places of a mountain district and to assign the results to the region as a whole. The irregularities must be traced out from point to point, and this requires a relatively much larger number of stations of observation than would be needed in the flat central valleys or in the Atlantic States. The dearth of settled inhabitants in the mountains of course makes it difficult to secure the numerous observations which are required, and on this account an appeal is made to all citizens to cooperate as far as practicable in securing such observations as are possible.

It is not only necessary to measure the snowfall in the open, in the forests, and in the drifts, and to treat the results somewhat independently one of another, but it is also necessary to take full account of the processes of melting and evaporation from these three types of snow fields. The snow is transported from place to place by the wind, some of it evaporates into the air and is lost for water resources during the winter, while the balance runs off in the course of the spring and summer into the canyons and rivers. The questions which relate to the rapidity of the melting are quite as important as those which are concerned with the rate of the snow accumulation from successive storms. Important practical questions have arisen regarding

the rates of the run-off of the water from the melting snows, and it is desirable to collect the facts impartially and to transmit them to the public for their information. Apparently the snow in the open first yields to the solar radiation as the spring comes on, and runs off more or less gradually and quite steadily into the rivers. The snow in the forest is somewhat protected from the first attacks of the higher temperature of the spring, and these snows appear to be held back for some days, so that they do not run off as soon as the snow in the open and they are then apt to cause more flooding when the forest snow finally yields to the warm air of the spring weather. The drifts accumulated to great depths in the ravines become heavily packed, so that the lower layers are practically solid beds of ice. The sun's rays attack the upper layers first, while the lower layers of the drift are well protected, until the removal of the upper sheets gradually exposes them to melting in the course of the summer. If the snows in the open and in the forests are associated with the spring freshets, the great drifts are the natural reservoirs which supply the streams with water during the summer months. It is important to make records of the conditions of the snow-drifts in each region, especially those which are the direct feeders of the rivers that supply the reservoirs and canals for irrigation purposes. It is necessary therefore not only to record the snowfall in the open and in the forest, but also to make the record contain practical notes regarding the condition of the snow in the heavy drifts. This will be done by inspection rather than by direct measurements, and good judgment is required on the part of the observer to report conditions as they are, and not exaggerate in either direction, lest a fictitious inference be deduced from the words of the report.

It has been noted that the freshets occur in the rivers several weeks later than the melting of the last of the snow in the open and in the forests. There are four dates which should be recorded each year at every place: (1) The date of the disappearance of snow in the open; (2) the date of its disappearance in the forest; (3) the date of the maximum freshet in the river; (4) the date of the final melting of the snow in the gulches. Several engineering problems depend for their solution upon the knowledge of these facts.

The amount of rain or snow which falls as precipitation in any given district should be referred back to two general causes: First, the configuration of the general circulation of the great currents in the atmosphere; and, second, the relation of the mountain masses on the land areas to these general currents. These two causes are closely interwoven, and it is not desirable to separate them too distinctly. On an ideal smooth globe the size of the earth, such as one composed entirely of a water surface, surmounted by an atmosphere which is heated by the solar radiation falling on the Tropics, there would be a certain general circulation consisting of a great westward drift in the Tropics near the surface, and a great eastward drift in the temperate zones.

Since the rain-bearing strata are usually no higher than a mile or so above the surface, the action of the general circulation at greater heights need not further be considered. The lower layer, 1 mile or so in thickness, is therefore chiefly responsible for the distribution of the precipitation.

Now, break up this ideal smooth globe by means of continents bearing mountain ranges, the oceans lying between them, and the ideal general circulation gets segregated into comparatively large but isolated masses of circulating air, through which the system of the Tropics and the systems of the temperate zones are to some extent merged into one another. Thus there is a large center of action on the Atlantic Ocean, extending from the Southern States to Africa, and another large center of action over the Pacific Ocean stretching from California toward Japan. The Atlantic center of action tends to throw more or less steady currents of air from the Gulf of Mexico northward, with an eastward trend, upon the central valleys and the Atlantic States. The Pacific center of action tends to throw currents of air eastward, with a southward trend, upon the Pacific States. The result is that the central and eastern portions of the United States are bathed with a succession of rains, and the northern Pacific States are likewise continually watered in the same way. The Atlantic rain area gradually thins out and disappears on the eastward edge of the Rocky Mountain plateau, because the currents of air from the Gulf of Mexico do not reach very far westward of the Gulf. The northern Pacific States are well watered, while the southern Pacific States are relatively dry. Portions of the moisture-bearing currents from the northern Pacific States overflow the mountains, and water to some extent the northern Rocky Mountain States. These general results are the direct consequence of the action of the North American continent in breaking up the ideal theoretical circulation into what may be called the topographical circulation, which it is the province of meteorologists to describe.

All this distribution of the general circulating currents, and the consequent precipitation, would occur whether there were forests or not growing on the land masses. It may be proper to say that the forests follow the precipitation and do not precede it. After the precipitation has fallen on land more or less covered with forests, the heavily wooded areas have something to do with the rate at which the water flows off from the higher elevations into the rivers and thence into the sea. Since the amount of forest growth responds intimately to the amount of water available on the higher elevations, the action of the forest will probably be considered as important in the control of the run-off, such as has already been described in preceding sections. It would not conform to the facts to assume that the forests as such draw precipitation into their locality.

The presence of a small lake in any region has practically no effect in deflecting the great currents in the general circulation. Like the forests, the lakes may profit

by the rainfall due to these great currents, but neither of them are causes of this abnormal circulation of the atmosphere. This great subject in climatology deserves the most serious attention of meteorologists. It will be possible to make advances in the solution of these questions only by studying the collected data extending over a series of several cycles, that is to say, perhaps a century of time, in order to determine the laws binding together the causes and effects of these complicated processes in the atmosphere.

4. The Different Types of Observers.

The cooperative observers of the Weather Bureau have generally taken readings of the temperature, rainfall, and prevailing wind direction. The temperature observations require a maximum and a minimum thermometer, and these are placed in a small weather bureau shelter constructed of louver work which causes a proper ventilation while protecting the instruments from the direct rays of the sun. Although it is desirable to secure temperature observations in the remote regions of the mountains, especially in connection with the melting of snows, it is obviously important to extend the observations on the snowfall and rainfall beyond the limits where it is possible to secure permanent residents who can make the complete set of climatological readings. It is therefore proposed to add two other classes of observers in the mountain districts, those who will report the snow and rainfall without temperature and wind at the places where they are living, and still others who will make occasional excursions or trips into the mountains beyond the places of habitation for an inspection of the condition of the snow fields. The first additional class of observers will be equipped with rain gages, snow bins, and tree snow scales, for the measurement of rainfall and snow depths, and with the apparatus necessary for converting a certain amount of snow into an equivalent amount of water; that is, for obtaining the water equivalent of the snow. The second additional class of observers will simply read certain scales attached to trees located in as remote points as is practicable to attain. Army scouts, forest rangers, guides, stage drivers, travelers on circuits, and all others of a like character who can bring in information will be enlisted in this work. They will be supplied with convenient pocket notebooks. The readings on certain snow scales or tree gages will be entered therein as is convenient in their movements among the mountains. The pages of this notebook are perforated and the report can be torn out and mailed to the section director of the State, as arranged by agreement with him. A proper compensation will be paid by the Government for these inspection trips, and the organization and administration of this work has been placed in the hands of the section directors. The more permanent settlers in the mountain districts who will agree to make these observations for the Government will be provided with snow bins, snow platforms,

tree scales, rain gages, and even with thermometers and weather bureau shelters as the section director may deem expedient. All reports are to be made conscientiously and as regularly as possible, and they should be forwarded promptly according to the arrangements agreed upon, because the value of the snow observations to engineers and all users of water depends largely upon prompt and accurate knowledge of the snow conditions in the mountains at a given time. It is evident that the value of these observations will increase as the years go by, because after a few years of experience it will be possible to determine whether the current year is above or below the average as to the amount of snow available for water resources. Especially it will be possible to determine the tendency to floods and freshets in the early spring, if it is once known what the normal amount of snow should be, and if it is also known what the temperature conditions are likely to be according to the season of the year.

5. The Measurement of Rainfall and the Measurement of Snowfall.

The apparatus required for measuring the depth of rainfall consists of an 8-inch cylindrical vessel with a funnel at the top which leads into a receiver graduated to the proper dimensions. The rain falling into the open funnel, whose rim is 8 inches in diameter, is carried into the receiver having a diameter of 2.53 inches, and the depth of the water is then determined by a measuring stick graduated to read in hundredths of an inch. The depth of water is measured by removing the funnel and inserting the measuring stick into the brass tube. When the stick reaches the bottom of the measuring tube it should be held for one or two seconds, and then quickly withdrawn and examined to see at what division of the graduation the top of the wet portion comes. The marks on the measuring stick give the actual depth of rainfall. It is important that the depth be recorded exactly as shown, since a failure to record the cipher (0), and the decimal point, will convey a wrong understanding of the amount of precipitation. When the depth of the snowfall is not very great the rain gage apparatus can be used for determining the amount by lifting the funnel off, removing the small tube, and exposing the open 8-inch tube to the snow. The following directions indicate the manner of converting the snow into the corresponding equivalent amount of water:

During the colder half of the year the receiver (funnel) and brass tube should be stored indoors, leaving only the overflow can, or the "snow gage" as it is called, exposed in the support. If rain should fall, it can be measured as described below.

If the precipitation is in the form of rain or snow that melts as it falls, pour the catch carefully into the brass tube and measure in the regular way. If, however, it is simply snow, take the gage into the house and pour into it one measuring tube full to the brim of water, preferably warm water. This, of course, will melt the

snow, or turn it into slush. Fill the brass tube full of this slush, empty it and then pour the remainder into the tube and measure in the usual way. This done, you will have discarded the amount of water that was used to melt the snow, the residue being the correct amount of water contained in the snowfall. It is also extremely desirable to give in addition the actual depth in inches and tenths of the unmelted snowfall since the last observation. As a rule, this is easily obtained by measuring the fall on a piece of plank kept near the gage. After taking the depth the plank can be readily turned over or cleaned to receive the next twenty-four-hour fall. If, owing to high winds, it is apparent that the snow gage has not caught the entire fall, empty the gage. Then, after selecting a spot where the depth of the snowfall in the last twenty-four hours is about the average, cut out a section with the snow gage by pushing its mouth downward into the snow to the ground, or, if there was old snow on the ground, to the surface of the old snow, and then slip under the mouth of the gage a thin board, or sheet of tin, or anything else that will serve the purpose; reverse the gage, and melt and measure in the regular way. Always record also the unmelted depth in inches and tenths.

The water equivalent of snow is the quantity which it is really desired to obtain, because precipitation is always recorded in terms of the depth of water. On different occasions snow falls with very different water equivalents. When it is very dry, it may take 30 inches of snow to make 1 inch of water, and when it is very moist 3 inches may be equivalent to 1 inch of water. Under ordinary conditions the water equivalent is from 10 to 15 inches of snow to 1 inch of water. There is no fixed ratio between the snow and its water equivalent that can be adopted, and it must be determined for every snowfall.

When a bank of snow has been formed by drifting and is allowed to stand for some time, the lower part will become nearly solid ice and have a very high water equivalent, while the upper part may have a comparatively low water equivalent. These conditions should be kept in mind by those who are giving estimates as to the state of the snow in the great drifts. Over forested areas large quantities of snow may lodge on the foliage and branches of trees and evaporate into the air without reaching the ground at all, and this condition should be borne in mind when estimating the amount of water that will be available as run-off. The snow in the forest may be packed very differently from the snow in the open or the great drifts. As the snow begins to melt in the spring the water equivalent changes rapidly in any vertical column and the ratio of the snow depth to the water depth continually decreases.

Prof. C. F. Marvin, of the Weather Bureau, proposes to measure the water equivalent of the snow by means of weighing a fixed volume of the snow. A convenient pair of scales of the spring balance type can be easily adjusted to the circular dial, which will indicate the inches and tenths of the water equivalent to the snow

mass placed in the weighing pan. It is desirable to employ both these methods of measuring the water equivalent of snow until it is determined which is the more convenient in practice for observers in the mountain districts.

It is well known that the snow falls into a receiver with accuracy so long as there is no special wind velocity. When the wind is blowing hard, the receiver as a snow gage steadily deteriorates in accuracy and is much less valuable for catching snow than it is for catching rain in a wind. The snowflakes are so light that they are carried in the wind past the mouth of the receiver without falling into it. Furthermore, the wind sets up a series of eddies around the receiver, and this tends to deflect the snow away from the mouth of the receiver and to prevent its falling into it. On this account the best catchment of snow has always been a difficult problem for meteorologists. Many devices have been invented to overcome the difficulties caused by the drifting of the snow in the wind. Various hoods and deflecting devices have been tried, but it has been found in nearly all cases that they become unserviceable because the snow tends to stick and clog up the openings so that they do not retain their proper shape. As there is very little hope of devising any apparatus to catch the snow accurately in a small tube, such as an 8-inch pipe, it has been decided to make a trial of another form of apparatus. Our present idea is to make the area into which the snow falls very large as compared with the small 8-inch tube. A cubical box, 5 feet square on all the sides and on the bottom, with the top open, will be placed on a stand or other support, so that the top of the box shall be something like 10 feet above the ground. To some extent this position will obviate the difficulty of the drifting snow, and the large surface area ought to eliminate some of the small currents of air which deflect the snow away from the small open receiver. It is admitted that any obstacle, even the 5-foot snow bin, will set up wind eddies which will modify the snow catch. It is, however, proposed to set up these bins in glades of the woods, or in openings among the trees where the wind velocity is considerably diminished and where the fall of snow at least below the height of the tree tops is much more nearly vertical. A ladder should be built outside the bin, and another inside the bin, so that the observer can enter and make the measurement of the snow depth in the bin after having leveled it, or a trapdoor in the bottom and a door on the side may be constructed. Then take the water equivalent by either of the methods described above. The bin should at once be carefully cleaned and made ready for a new snowstorm. The amounts of snow recorded in successive snowstorms during the winter will make up the total amount of snow precipitation for the year. It will require good judgment in all cases to make an efficient use of these bins or any other apparatus of the kind. The bins may be constructed of pine boards, and they need not be exactly cubical in form at all stations. It will be sometimes convenient to saw off small trees and attach the

boards to them, so that the structure will be practically a bin of the dimensions of the 5-foot cubical box. Since the bin is to be cleared out after every storm the joints need not be water-tight. They should be close enough to hold the snow.

In order to compare the action of these bins with the snow on the level, it is recommended that, in certain places where an observer can be obtained, a 10-foot square platform be built on the ground. On this platform the snow will fall as it would in the bin, and the depth of snow can be measured upon it with accuracy. These platforms also should be cleared off after every snow, and the necessary provision should be made to prevent the wind from drifting upon it the snow that has previously fallen and is lying on the ground in the neighborhood.

In many cases it will not be practicable to use the regular pipe-snow gage nor the snow bin, and it is proposed to place scales of wood painted in feet and tenths on the sides of small trees. The trees should be selected at such points as are known to receive the average amount of snow, where there is no special sweeping of the landscape bare, nor drifting action caused by the wind. These scales can be made of wooden strips or of galvanized iron; or wooden pegs can be inserted into the tree trunk like a ladder, one peg for every foot. Bore a hole with an auger $1\frac{1}{4}$ inches in diameter in a tree 6 or 8 inches in diameter near the base and having a smooth, straight trunk. Insert into the hole a cross piece or round of wood about 18 inches long, and nail it in so that it will not slip. A snow gauge of considerable height can be made in this way when necessary, the lower rounds serving for supports while the upper holes are being prepared. If a tree is stripped of its bark and painted in 1-foot blocks of alternate colors, as black and red, it will make a conspicuous mark which can be seen at long distances when snow is on the ground. Certain of these snow gages should be located at proper points along the mountain ridge, where it is not very easy to climb when the snow is on the ground, and the observer, if provided with a good field glass, could see such a gage at a considerable distance, as half a mile, and make a fair estimate of the state of the snow without actually going nearer to it. A tramp on snowshoes on the snow in the lower levels would be by no means difficult in the winter as compared with a climb upon the ridges. If these tree gages are set up during the summer in considerable numbers, it will be possible for an observer in the winter to read several of them in the course of a single day's march. It is hoped that numerous expeditions of this kind will be organized in the different States, so that the distant snow gages can be visited two or three times after the 1st of January, especially in February and March, before the snow begins to melt. From these reports a very fair conclusion may be reached regarding the average conditions of the snow in a given watershed. Since the mountains of the West extend over so large an area, it will be practicable during the next few years to cover only a comparatively small part of the entire territory,

and it is proposed to select for our operations at the first only those watersheds and amphitheaters around the heads of important rivers where the snow values are very important to irrigation and other engineering projects. If experience proves that this system is practicable, it will doubtless be extended to the more remote regions in the course of time. Further instructions regarding climatological observations can be found in a pamphlet issued by the U. S. Weather Bureau entitled "Instructions for Cooperative Observers," W. B. No. 347, 1906. Also, Form 1010–Mis. has been prepared for use by those who can visit these remote snow scales on the trees. The form is put up in a small book convenient for the pocket, and the leaves are perforated so that a leaf containing the report of a day's observation can be torn out and forwarded in a government envelope to the section director of the State.

It is evident that for the purposes of identification as to locality and reference in publication all snow bins and tree gages should be carefully numbered. A sign on metal containing the number and marked "Property of the U. S. Weather Bureau" should be attached to each piece of government property in the field. These signs can be made by the section directors according to their own design and charged up against their appropriation. A station where there is a resident observer may have in its neighborhood a set of substations where tree gages are read. These may be numbered in connection with the primary station, as, for example:

Station, Hunter.
Substations, Hunter (1).
Hunter (2).
* * *.
Hunter (10).

The question of publishing the snow data is one which involves many considerations. At present it is thought that something like the following plan should be adopted:

All snow data should be collected by section directors in their respective States. In assembling the same for publication it is quite clear that the topographical units should be the great river basins, and not the state boundaries, which are distinctly artificial and have but little relation to the climatological conditions. Taking any given river basin which is bounded by the line of highest elevation on the several sides, the snows pass from the mountain regions through the ravines, canyons, and valleys into small streams whose waters accumulate in larger rivers till they at length flow to the ocean. Referring to the map of the U. S. Geological Survey, No. 7549 B, it is easy to trace out these river basins, such as the Columbia, the Colorado, the Missouri, the upper Mississippi, the Ohio, and so on. There are fourteen or fifteen of these natural drainage areas in the United States. Their boundaries cross the States

entirely regardless of the state lines; thus, in Colorado four great river systems head up in the high mountains around Leadville and Gunnison; the Yellowstone National Park is at the headwaters of four distinct rivers. It is in such localities that the great storage basins will be built, and from them the water supplies for irrigation purposes during the summer months will be derived. It would seem desirable to construct base maps of these natural basins containing the river systems, and the principal topographical features, using them as mother-maps to show the location of the numerous stations which will be established throughout the entire region. In publishing the data, which should include the depth of the snow and its water equivalent, it would seem proper to arrange the stations along the trunk lines of the great rivers, with subdivisions gradually branching off along the smaller streams, and finally heading up into the high snow fields of the mountains. Engineers and others who are concerned with water resources will then have an opportunity to consider the relations of the snow fields along the several water courses, to the freshets, floods, and storage waters. There are some difficulties connected with the monthly publication of such data, and this plan would involve a considerable reorganization of the climatological work of the Weather Bureau. It is desirable that this important topic be fully discussed, and suggestions on the topic generally will be welcomed and carefully considered.

Chapter 3.

EVAPORATION.

6. The Phenomena of Evaporation from a Practical Point of View, and the Theoretical Status of the Problem.

The phenomena of evaporation have been studied in the laboratory and in the field by many scientists, but the problem has proved to be so complicated that no definitive formulas have been secured. A summary of the theoretical researches may be found in Vol. II, Weinstein's Thermodynamik, 1905. It should be observed that the phenomena in the laboratory, where the boundary conditions are limited by the requirements of the apparatus, differ so widely from those in the open air that the results obtained in the laboratory are not applicable to the practical processes over lakes and reservoirs exposed to the free air. The movement of the wind complicates the simple action observed in a quiet laboratory, or in calm weather, and to some extent renders the entire research strictly empirical. When the formulas resulting from several researches on evaporation over large bodies of water in the open air are compared together, it has been found that the so-called constants in the formulas are by no means the same. The literature on the subject of evaporation is already very large, and a bibliography with brief summaries has been prepared by Mrs. Livingston, which is being published in the Monthly Weather Review, June and September, 1908, to be continued in following numbers. In order to summarize the status of the problem, several of the leading formulas were brought together, and the results compared in a paper by Prof. F. H. Bigelow in the Monthly Weather Review for July, 1907. In view of this general discrepancy among these and other researches, it seemed desirable in the interest of practical meteorology to attempt to discover the primary cause of this disagreement. It appeared probable that the formula which had been employed was not adequate to do the work required of it, under the complicated conditions prevailing in different localities and climates as regards evaporating water surfaces. The overflow of the Colorado River into the Salton Sink in 1906 produced a fresh-water lake now called the Salton Sea, about 45 miles long and 10 or 15 miles wide, containing 440 square miles of surface area, and in May, 1907, it was 205 feet below the mean tide level of the Pacific Ocean. The restoration of the Colorado River to its old channel by means of strong levees cut off the Salton Sea from any important accession of water from the outside. The rainfall is something like 2 inches a year, and the overflow from the Imperial Valley through the irrigation canals into the New and Alamo rivers can be easily measured by gages in the neighborhood of the town of Brawley. The climate of the region being very dry and very hot during the summer months, the process of evaporation from this large

body of fresh water is rapid. The sea seems to be falling at the rate of about 6 feet a year so far as evaporation is concerned. It is about 75 feet deep, and it will probably dry out in twelve or fifteen years. Such an opportunity to study evaporation on a large scale will hardly occur again, and it seemed wise for the Government to undertake an extensive campaign covering the entire subject. For this purpose a special camp has been established at the Salt Creek Trestle near the Salton Station, with auxiliary stations on a simpler scale at Indio, Mecca, Mammoth, and Brawley. It is hoped that a two-years' campaign will carry this problem to a completion.

As a preliminary study, in order to gain some idea of the nature and complexity of the evaporation phenomena, a temporary research was carried out at the city reservoir in Reno, Nev., during August and September, 1907. An account of this research may be found in the Monthly Weather Review, February, 1908. Five towers were set up at this reservoir; one on a dike near the middle of the reservoir; one on the east bank and one on the west bank; one 450 feet east of the east bank, and one 450 feet west of the west bank. The towers were about 45 feet high, and pans were located on stages every 10 feet from the surface to the top. In all there were 29 pans operating under conditions which were uniform, except so far as the evaporation from the water surface produced a vapor blanket, which covered the reservoir to a certain depth and overspread its bank to a certain distance, so that the pans were located in different parts of this vapor. The result was to show that the pans thus placed at different points within this vapor blanket evaporated at very different rates. By tracing the differential action in a vertical direction, and in an east and west line, it was possible to lay down the general principles of a formula which appears to be working in the right direction. It was clearly shown that it is not proper to transfer the amount of the evaporation observed in an isolated pan, located on the surface of the ground at a distance from the water surface, to the evaporation of the water itself in the reservoir. The divergencies noted among the several researches are chiefly due to the fact that no sufficient account was taken of the immediate surroundings of the various pans. Evaporation is very sensitive to the atmospheric conditions within an inch or two of the surface of the water and to the temperature of the water, and since a multitude of local conditions may influence either of these factors the amount of evaporation integrates the effect of the circumstances where it is going on. The further short research carried on at Indio, southern California, in October and November, 1907, emphasized these facts. They have further been confirmed by observations made at Indio and Mecca in the summer and autumn of 1908.

In view of the practical importance of a knowledge of the law of evaporation over reservoirs, it has been arranged that the United States Weather Bureau should cooperate with the United States Reclamation Service and the Water Resources

Branch of the United States Geological Survey in securing observations on evaporation in different climates and under different local conditions. During the summer of 1908 Professor Bigelow visited the following projects of the Reclamation Service, as well as the Salton Sea and its auxiliary stations:

Reservoir.	Place.	County.	State.
1. Salton Sea	Desert, Imperial and Coachella valleys	Riverside	California.
2. North Platte	Mitchell	Scotts Bluff	Nebraska.
3. Shoshone	Powell	Big Horn	Wyoming.
4. Minidoka	Rupert	Lincoln	Idaho.
5. Payette-Boise	Boise	Ada	Do.
6. Umatilla	Hermiston	Umatilla	Oregon.
7. Sunnyside	North Yakima	Yakima	Washington.
8. Klamath	Klamath Falls	Klamath	Oregon.
9. Truckee-Carson	Fallon	Churchill	Nevada.
10. Salt River	Phoenix	Maricopa	Arizona.
11. Engle	Engle	Sierra	New Mexico.
12. Carlsbad	Carlsbad	Eddy	Do.
Under the supervision of the U. S. Geological Survey.			
13. Chicago Drainage Canal	Lockport	Will	Illinois.
14. Cincinnati	California	Hamilton	Ohio.
15. East Lake	Birmingham	Jefferson	Alabama.
16. Tupper Lake	Tupper Lake	Franklin	New York.

The Weather Bureau supplied the evaporation pans, thermometers, anemometers, record books, and certain instructions, and the cooperative services are to undertake the observations beginning in the spring of 1909. The installation of the plant at the Salton Sea will be completed about the same time, and the entire series of observations will begin in March or April, 1909.

7. The Theoretical Formulas.

The formula upon which most of the work had been done by other investigators is known as the Dalton law:

$$E = C(e_s - e_d)\ (1 + Aw),$$

but it has been shown to be insufficient for its purpose. Bigelow's first formula and its action was described in the Monthly Weather Review, February, 1908, together with certain other necessary data. By these it was indicated that two terms had been successfully worked out, and that the other terms needed further research. By a study of the Indio and Mecca observations and a recomputation of the extensive set of Reno observations, it has been possible to improve the formula in one important term. There still remains another term to be discovered, and it is supposed that

the determination of this missing term will make the formula complete. It is the purpose of this manual to explain and put in practical form Bigelow's second evaporation formula, inasmuch as the tables materially diminish the labor of making the observations and the work of computation. It indeed promises to enable us to entirely dispense with the use of evaporation pans, and to make the work of measuring evaporation refer simply to the records of the thermometers and anemometer as described in the following sections.

Bigelow's first evaporation formula is:

$$E = C\, e_d \frac{de}{dS} (1 + Aw)$$

where,

E = the change in the height of the water in the interval of time, the height being recorded in centimeters.

C = a variable coefficient.

e_d = the vapor pressure at the temperature of the dew point.

$\frac{de}{dS}$ = the rate of increase of the vapor pressure of saturation with the temperature of the water surface.

A = the wind coefficient, 0.0175.

w = the average velocity of the wind during the interval of time, recorded in kilometers per hour.

Bigelow's second evaporation formula is:

$$E_o = 0.100\, C \frac{e_s}{e_d} \frac{de}{dS} (1 + Aw)$$

where,

e_s = the vapor pressure at the temperature of the surface of the water.

This formula seems to eliminate,

(1) The variations in the evaporation due to the wind effect.

(2) The variations of the evaporation due to the diurnal radiation.

(3) The variation of the evaporation due to a change in elevation from the water surface, and from the center of the water area to the surrounding country.

For convenience of computation, $0.100\, C = C_1$.

After the elimination of these three types of variations there still appears to remain one more source of variation, which, so far as now known, is in general climatological, in the sense that it is different at Reno, Nev., $C_1 = 0.090$, from what it is in the Salton Sea region, $C_1 = 0.060$, during the summer months. In order to discuss the nature of this term, it will be necessary to make observations in several different climates during one or two years, so as to determine whether this coefficient has an annual as well as a climatic term.

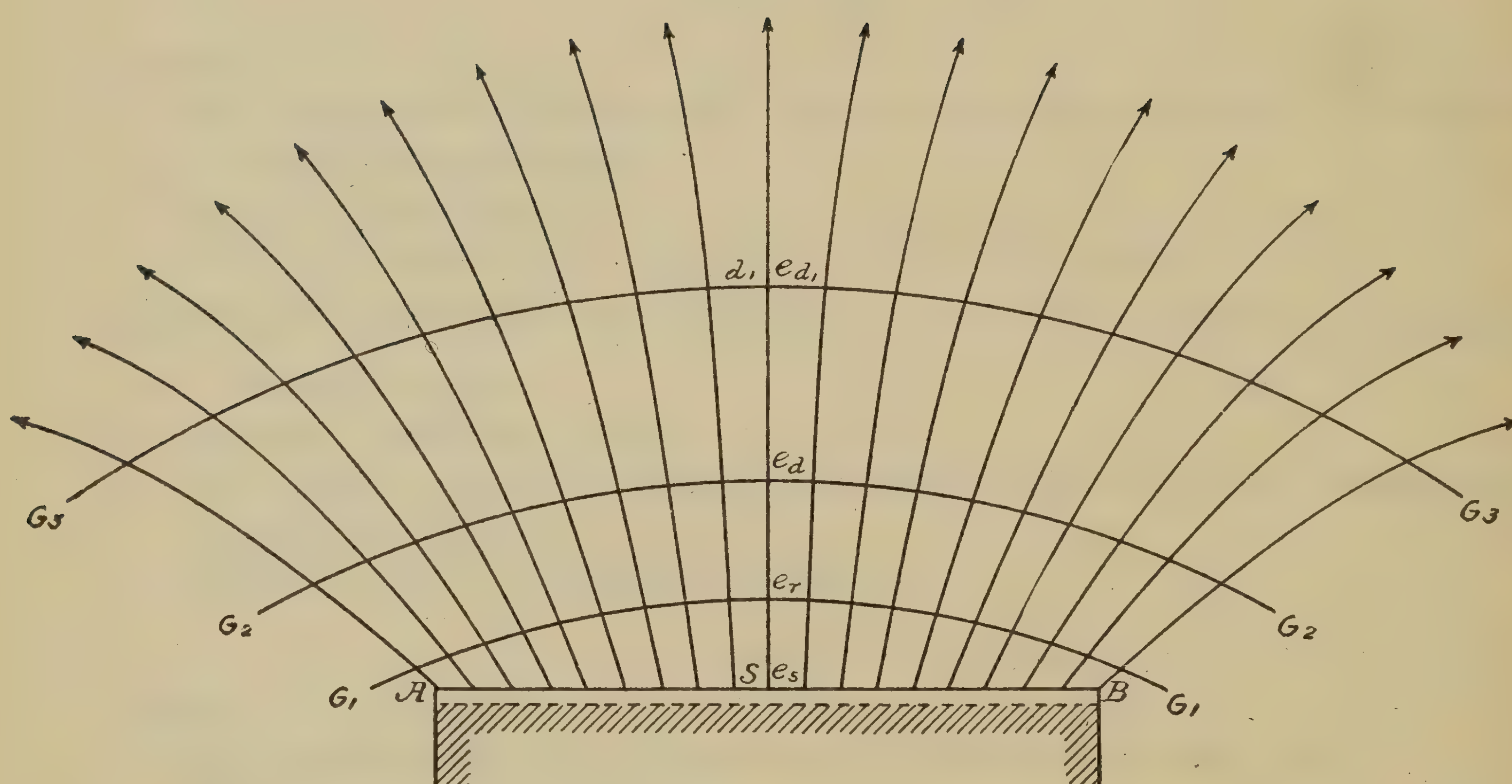

FIG. 1.—EVAPORATION FROM A WATER SURFACE.

8. The General Theory of Evaporation.

The general theory upon which the formula is constructed can be illustrated by means of figure 1, Evaporation from a water surface. From the surface of any sheet of water, when the air rests upon it without motion, as in a perfect calm, a series of vapor-pressure tubes extends upwards, gradually spreading out into a sheaf, like the magnetic lines surrounding the pole of a magnet. The vapor pressure at the water surface is a maximum e_s, depending upon the temperature of the water surface S, determined by the submerged thermometer. This vapor pressure diminishes along the tube of outflowing vapor till it falls to its minimum, namely, the vapor pressure at the dew point of the air e_d. Intermediate between e_s and e_d are to be found other vapor pressures, as e_r, measured by the dry and wet bulb thermometers floating on the top of a small raft, where the thermometers are sustained about 1 centimeter above the water surface. Between two such points in a tube, as e_s and e_r, the pressure is maintained such as it is by a flow of vapor particles in the tube, so that a certain mass of vapor flowing at a certain rate is required to maintain the observed vapor pressures, and this flow integrated for a given interval is a measure of the amount of the evaporated water. A certain mass multiplied by a certain gradient multiplied by a time coefficient measures the amount of vapor evaporated from the water surface. It is necessary to know the volume of vapor produced by a given volume of water, and then to determine the rate at which the vapor flows along the tubes in the interval of time. These tubes bend away from the axis at the center, which is a normal to the water surface, because the hydrostatic pressure acts in directions perpendicularly across the tubes as well as tangentially along them. Unfortunately the movement of the wind disturbs this figure of evaporation in calm air, and distorts the shape of the tubes by inclining the sheaf in the direction of the wind, while at the same time sweeping the tubes bodily away in the wind. There is consequently formed a succession of imperfect vapor tubes which break in the current of air blowing over the water surface. On the windward side the new vapor tubes are projected into the fresh masses of air and evaporation takes place more rapidly there, where the tubes are drier, than on the leeward side, where the vapor tubes accumulate and are partially saturated, because the tubes have drifted over the intervening water areas. The tubes in a calm reach out beyond the areas of the water surface, on account of the hydrostatic pressure, and gradually become absorbed in the neighboring relatively drier atmosphere. The depth of this vapor blanket is determined by the relations between e_s and e_d. If e_d is equal to e_s there is little evaporation and the vapor tubes are long. There would be no evaporation if the value of e_d was a constant and equal to e_s throughout the atmosphere in the neighborhood of the water. If e_d

is small relatively to e_s, and the water area is located in a comparatively dry region, the evaporation will be rapid, because the gradient of the vapor pressure is strong along the tubes.

It is necessary, therefore, to determine at least four terms in an evaporation formula, and they may be summarized as follows:

C, a coefficient proportional to the time and pertaining to the climate in general where the evaporation occurs, as Reno, Nev., on the Rocky Mountain Plateau; Mecca and Indio, in the desert of southern California; Tupper Lake, in the Adirondacks. It is probable that the C-coefficient consists of a constant and some simple function of the vapor pressure, but it is not yet known what the function is, though it is suspected to be Const. $\times \frac{e_t - e_d}{e_d}$ where e_t is the saturation vapor pressure at the temperature of the dry-bulb thermometer t.

$\frac{e_s}{e_d}$ or $\frac{e_s}{e_r}$, the gradient of the flow along the vapor tubes.

$\frac{de}{dS}$, the mass of the vapor which it is possible for the given volume of water, as 1 centimeter, to produce at the given temperature.

$(1 + Aw)$, the wind effect, already determined at the Reno reservoir, with $A = 0.0175$.

This makes the evaporation proportional to the mass which flows through a given vapor tube in a given time, modified by the wind effect in removing partially saturated air, and presenting fresh masses which are less saturated and capable of absorbing more vapor. These terms will be explained in greater detail, in the order:

$$\frac{de}{dS}, \frac{e_s}{e_d}, (1+Aw) \text{ and C.}$$

(*a*) THE MASS OF VAPOR AS EXPRESSED BY THE TERM $\frac{de}{dS}$.

The relation between the volume of water, v_2, which changes into a corresponding volume of vapor, v_1, at an absolute temperature, T_2, is expressed by the well-known Clapeyron formula:

$$v_1 - v_2 = \frac{r_2}{T_2} \frac{dT_2}{de} 41855000 \frac{760}{1013240} \text{ (in cu. cm.)},$$

where v_2 is the latent heat of the evaporating water.

$\frac{dT_2}{de}$, the rate of change of the temperature with the change of the vapor pressure.

41855000, the mechanical equivalent of heat.

760, the normal pressure of 1 atmosphere, in m. m.

1013240, the pressure of 1 atmosphere in dynes.

The ratio $\frac{r_2}{T_2}$ is evaluated as follows:

T_2	r_2/T_2
°	
273	$\frac{606.5}{273} = 2.22$
283	$\frac{599.4}{283} = 2.12$
293	$\frac{592.3}{293} = 2.02$
303	$\frac{585.3}{303} = 1.93$

Considering the incessant fluctuations of the pressure and the temperature, which it is not possible to follow closely in practical evaporation work in the field, we may, for the sake of simplicity and with sufficient accuracy for the remaining terms of the evaporation formula, assume that

$$\frac{r_2}{T_2} 41855000 \frac{760}{1013240} = 62790 \text{ (approx. constant).}$$

The accurate computation of this formula for v_2, assuming $v_2 = 1$, at the different temperatures, $T_2 = 273 + S$, gives

S	v_2	v_1
°C.		
0	1	211, 356
10	1	109, 006
20	1	59, 312
30	1	33, 507
* *	* *	* * *
100	1	1, 659

Consequently, in the formula, v_2 can be neglected in comparison with v_1, so far as volume is concerned. Transposing the formula

$$\frac{de}{dS} = \frac{1}{v_1} \times \text{constant} = \rho_1 \times \text{constant},$$

since

$$dT_2 = d\ (273 + S) = dS.$$

It appears that $\frac{de}{dS}$ is proportional to the mass of vapor which it is possible for water at a certain temperature to produce. This simple expression for the mass ρ_1 is a definite function of the temperature of the water surface S, and it is computed from the table of saturated-vapor pressure as given in the Smithsonian Table 43. Table 5 gives values of $\frac{de}{dS}$ at the middle of the degree intervals, and also at the point of passing the temperature degree. The values of e_s are given in Table 5, and we assume for present purposes that the coefficient $C = 0.100$. Hence the values of $C_1\, e_s \frac{de}{dS}$ are also to be found in Table 5. The formula for the evaporation calls for numerical values of the expression

$$E_1 = \frac{C_1\, e_s \frac{de}{dS}}{e_d},$$

and these are given in an expanded form in Table 6, for values of e_d from $e_d = 3.0$ to $e_d = 20.0$ at every tenth millimeter, so that there shall be no important double interpolation in using this table. This term is the total evaporation during the interval of time for which C_1 is computed in a calm atmosphere, and it is the primary term of the evaporation.

(b) THE GRADIENT TERMS $\frac{e_s}{e_d}$ and $\frac{e_s}{e_r}$

It was originally supposed that it would be necessary to observe the vapor pressure at about 1 centimeter above the surface of the water in order to get the term in the gradient ratio $\frac{e_s}{e_r}$, which would measure the primitive impulse outward in the evaporation process. This consists in a bombardment of the aqueous vapor molecules into the free air, and a bombardment of the dry air molecules toward the water. This interchange of the two kinds of molecules takes place very near the surface of the water, and the final result is to maintain a difference of vapor pressure over the water surface, diminishing with the height above it. For the purpose of measuring these differences of vapor pressure, one thermometer was floated just submerged on the under side of the bridge of a small raft, while the wet and dry bulb thermometers were raised about 1 centimeter above the surface. An extensive series of computations according to these formulas have been executed with the two ratios

$$\frac{e_s}{e_r} = \frac{\text{vapor pressure at the surface.}}{\text{vapor pressure at 1 cm. above the surface.}}$$

$$\frac{e_s}{e_d} = \frac{\text{vapor pressure at the surface.}}{\text{vapor pressure at a considerable height, as 1 to 2 feet.}}$$

The vapor pressure e_d is determined by the ordinary sling psychrometer, swung by the observer standing over the evaporation pan, and it measures the vapor pressure at about 2 feet above the water surface. It was shown at Reno, Nev., and at Indio and Mecca, southern California, that the relations between e_s, e_r, e_d are such that the computations executed by the system $\frac{e_s}{e_r}$ give a certain value of the coefficient C_r, which is nearly a constant throughout the twenty-four hours of observation and from pan to pan up the tower. The system $\frac{e_s}{e_d}$ gives another value of the coefficient C_d, which is likewise about constant, and such that $C_r = 1.20\ C_d$ approximately. Generally speaking, either system can be used with equal success so far as the formulas are concerned, but it will be usually more convenient in practice to employ the sling psychrometer than the floating psychrometer. The question of ventilation of the thermometers on the raft near the water seems to be of very little importance in this work, as proved by the experiments at Reno, Nev., because the resulting ratios in the formula are nearly equal. In some respects the floating psychrometer near the water surface, lying in the layer of air where evaporation is actively in progress, would seem to be a better instrument for registering the actual conditions than the psychrometer which is ventilated by vigorous swinging in the air, because it is more nearly in the same physical state as the vapor, since it is located in the same part of the vapor sheet. Practically no difference in precision has been found as the result of the numerous observations which have been discussed. We shall, therefore, in the future usually depend upon only one floating submerged thermometer and a common sling psychrometer for the observations of the meteorological data.

(c) THE WIND EFFECT $E_1 A w$.

From the anemometer observations made at Reno, Nev., 1907, the value of the wind coefficient was found to be $A = 0.0175$ in the second term of the formula

$$E_1 A w,$$

where w is the velocity of the wind in kilometers per hour.

An attempt will be made to sort the observations and the computed values of the C-coefficient at other stations in such a way as to determine the value of the A-coefficient in other localities should there be any evidence of variation from this result. At high velocities the anemometer readings need a considerable correction to give true wind velocities, such as is indicated by Professor Marvin's experiments. Compare Table 64, Monthly Weather Review, October, 1906.

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The value of the wind effect is given by

$$E_2 = E_1 \times 0.0175w,$$

where E_1 is the amount of evaporation in a calm. Table 7 has been constructed to give this term E_2 apart from E_1, so that the total evaporation is

$$E = E_1 + E_2.$$

The values of w are read from anemometer dial. The readings are taken at the successive hours of observation. Then the difference between the anemometer readings at two successive observations, divided by the number of hours elapsed, gives the average hourly wind velocity in kilometers per hour during this interval of time. At Reno, Nev., the interval between successive observations was three hours; at Indio and Mecca, southern California, it was four hours. In the former case the C-coefficient is computed for three-hour intervals, and in the latter cases for four-hour intervals, and for comparison they must be reduced accordingly by multiplying the former with the factor 1.33 to reduce to the latter value of the C-coefficient.

(d) THE C-COEFFICIENT.

In attempting to work out a formula for the processes of evaporation it is possible to do this only by taking up term by term, first those which are more obviously accessible, and then by various combinations, those which are more obscure. Thus, we have already evaluated terms for the mass, the gradient, and the wind effect. There still remain other terms involving the constant factors in the expression for the mass and the time. Apparently still another function exists, depending upon the vapor pressure at the dew-point temperature. These outstanding quantities are summed up under the C_1-coefficient, and it is the next step in the research to attempt to evaluate this more fully.

The Reno observations show that this C_1 is nearly constant at the pans above the surface of the water, but there was a tendency for the C_1-coefficient to drop in value near the water. It should be noted that there is an increase in the vapor pressure nearly proportional to this fall in the value of the C_1-coefficient. The preliminary observations at Indio and Mecca, near the Salton Sea, indicate that there is a distinct drop in the value of this C_1-coefficient, so that we note a change from 0.090 at Reno to 0.060 at Indio, to 0.040 at Mecca. At the same time it is observed that the mean vapor pressure at the dew-point increases from 7.0 at Reno to 11.0 at Indio, to 16.0 at Mecca. Now it appears that the product of these two quantities becomes 0.63 at Reno, 0.66 at Indio, and 0.64 at Mecca, so that there is an apparent connection between them. The observations are by no means sufficiently numerous to make a

generalization in the formula, and this part of the work is therefore reserved for the campaign organized for the year 1909.

The value of the coefficient C, given in the example, is the ratio between the observed evaporation E_o and the computed evaporation E_m. This, however, should be combined with the assumed value of the C-coefficient, namely, 0.100, because this is merely a modification of that assumed value. If that value had been correct, the ratio here computed would be equal to unity and $C_1 = 0.100$. It is evident that the true value of the C_1-coefficient is obtained by setting the decimal point one place to the left of the values found by the computation. In the example for August 12 the true value of the C_1-coefficient is $0.100 \times 0.70 = 0.070$. In this way the whole subject-matter involved in this coefficient can be studied and discussed.

Whether the evaporation pan which is used for determining the amount of evaporation at the water surface is floated in the water or suspended near the water it is evident, as already stated, that while the vapor pressure at the dew-point of the air will be the same over the water in the pan as it is over the water in the large area, the temperature S of the water in the pan will be somewhat different from the temperature in the large body of water, which will be called S_o. The raft should therefore first be floated in the pan and the readings taken; it should then be floated in the water of the lake or reservoir, and simply the reading of the submerged thermometer S_o recorded. This can be entered in the E_1 column on the same line with the S temperature, so that the temperatures S and S_o will be on the same line. The value of E_1 can be written just below that for S_o. Now it is evident that by entering Table 6 first with the arguments e_d and S the value E_1 for the water in the pan will be obtained. Now enter again with the same value of e_d but with S_o, and another value of E_1 will be found. The difference between these two values of E_1 will be the correction which should be applied in transposing the observed amount of evaporation in the pan, E_o, to reduce it to the amount that would be obtained if direct measurements could be found of the gage heights in an open body of water. On this principle it is evidently valid to measure the water heights in a pan, and correct them to corresponding heights in a large body of water. The temperatures of the dry and wet bulb thermometers on the raft, D, W, need not be read or recorded for the large body of water.

9. The Apparatus and Observations.

PANS.

Evaporation pans have been made of various sizes from 8 feet to 2 feet in diameter. Those used at Reno, Nev., were 6 feet and 2 feet, respectively. It has been supposed that the size and depth of the pans are important factors in the rate of

evaporation. The result of much study of this subject brings us to the conclusion that the real difference consists in this fact, namely, whatever circumstances tend to produce a certain temperature of the evaporating water surface is of influence in producing the resultant evaporation. It is the location of the pans relatively to their surroundings rather than their size or depth which is important. The same pan buried in the sand, standing on the surface of the ground, standing on a platform raised above the ground, floating in the water, standing near a water surface, standing high above the water surface, will evaporate at different rates. This is proved conclusively by the results obtained at Reno, Nev., and Indio, Cal., in 1907. The water in a small pan will follow the temperature conditions of the surrounding air quicker than the water in a large pan because of its smaller mass. The temperature of the water in a large pan lags behind the temperature of the air from one to two hours, and on this account the small pan is better than the large pan. It is also more convenient because it requires much less water to fill it, and this is in certain places an important consideration.

Pans are generally constructed of galvanized sheet iron, No. 24 or No. 26, the joints being heavily soldered and the top stiffened by an iron hoop riveted to the rim. A convenient depth for the pan is 10 inches. If the galvanizing is done after the pan is made, the heating of the iron is apt to produce wrinkles in the bottom, which are very undesirable. The Weather Bureau is now using pans of 2, 3, 4, and 6 feet in diameter, in all cases 10 inches deep. For shipment they are put up in nests so that six pans can be shipped in one crate.

It has been customary to bury the pans in the soil, or to float them in the water, with the view of keeping the temperature in the pans as nearly as possible the same as that in the soil, or in the water of the lake or reservoir which is undergoing evaporation. As a matter of fact it is impossible to maintain the same temperature within the pan which the water has outside of it, because of the absorption by the metal of heat from the sun's rays, and the convection currents from the iron of the pan to the water. There is always a small correction due to this difference of temperature, and it is one of the primary purposes of this research to eliminate the pans entirely from the final procedure which will be adopted. A pan may be floated by building a wooden framework around the top, to which the pan will be attached at several places by angle irons soldered to the pan and fastened to the frame. This frame stiffens the pan while it renders it buoyant at the same time. The frame may be placed near the top of the pan and then the pan will float deep in the water. In this position it will be liable to receive outside water by surging from the waves, or the splashing of drops carried by the wind, which of course renders the readings on the gage for the water height incorrect to that extent. If the frame is placed at the lower edge and beneath the pan, the pan will float high, and will be by so much the

safer from the effects of wind and wave. It is recommended that all pans be supported on floats so that they will stand 7 inches out of the water, while 3 inches are submerged. The float in all cases should carry a heavy crosspiece under the bottom of the pan near the center. The bottom of the pan should be firmly attached to this crosspiece by angle irons soldered to the pan and then screwed into the wooden crosspiece. This will keep the bottom of the floating pan from buckling and surging as it rises and falls in the water. Unless the center of the pan is held solidly in one position, it forms no fixed point from which readings on the water height can be made. Floating pans in small ponds and reservoirs must be surrounded by heavy breakwaters, generally of two parts, and on the windward side they should set deep enough in the water to break up the surface waves. Heavy planks 2 inches thick standing on the side, 12 inches wide and 16 feet long, joined together at the ends in a square, firmly cross braced near the corners, make a good outside breakwater. The inner breakwater may be about 8 feet square and attached somewhat loosely to the outer breakwater, so that it will move a little independently in its own place. The floating pan is placed inside of the 8-foot breakwater and moves about quite unattached. It will then float on the leeward side of the 8-foot space, as far as possible remote from the wave and spray effects.

In large bodies of water, as the Salton Sea, where the waves are always of considerable size, and at times of very large dimensions, it is entirely impossible to attempt to float pans by any method. Instead of floating the pans at the Salton Sea we are building towers at various points in the water. The lower pan rests on a movable platform, which will be attached to a cable running from a winch operated on the second platform of the tower, so that the pan and its platform can be raised or lowered at will in accordance with the state of the water. If the sea is calm the pan will be lowered near the water; if it is rough it will be raised away from the water. As the water surface recedes by evaporation from year to year, the pan will be gradually lowered to follow the retreating water surface. Measurements of evaporation at the temperature of the water in the pan will be supplemented by measurements of the temperature of the water in the sea by means of the small raft carrying a submerged thermometer. Since the sea is surmounted by a vapor blanket having the same vapor pressure for a considerable distance above the water surface, the suspended pan will be immersed in practically the same vapor pressure that covers the water of the sea itself. The Salton Sea towers will have stages or floors at every 10 feet from the water surface to 40 feet above it, with stairways, so that the observer can readily mount to the different platforms. Each floor will have a small projection on the south side, which will carry a 2-foot evaporating pan, such as was used at Reno, Nev. These pans on the south side are exposed to the full radiation of the sun from morning till night, and attain certain temperatures pertaining to their

respective positions. The differential action between these pans on the towers from one level to another, as compared with that of the sea itself, enables us to discuss the observations by the formula in the most compact and efficient manner. Anemometers will be placed at different elevations on the towers, and this will permit us to determine the curve of the wind velocity above the water surface. Three towers will be built at the Salton Sea; one near the Salt Creek trestle, in 25 feet of water; one in 40 feet of water about half a mile out; and one in 55 feet of water about 1 mile west of the trestle. The water is now receding at the rate of about 5 or 6 feet a year, being the balance between the total loss by evaporation, and the gain by precipitation, which is about 2 or 3 inches a year, together with the inflow from the Imperial Valley through the New and Alamo rivers, which is at present an unknown quantity. The U. S. Geological Survey will make the necessary gagings near Brawley for measuring the inflow through these two rivers. A fourth tower will be built on the land several hundred feet away from the water, which will give us measurements over the land in a vertical direction. A row of pans extends in a line perpendicular to the shore of the sea and stretches back into the desert, about 300 feet apart, the most distant pan being about 1,500 feet away from the water. These pans will be used to determine the differential rate of evaporation in passing from the water surface to the desert, and they will determine the distance to which the vapor blanket overspreads the land, so as to be effective in retarding the rate of evaporation by the thickening of the vapor. There will be four auxiliary stations in the neighborhood of the Salton Sea equipped with two pans each, one standing on the ground, and one raised on a stand 10 feet above the ground. The station at Mammoth, on the Southern Pacific Railroad, will give a measurement of the maximum evaporation possible in an excessively hot and dry climate. The station at Brawley, midway between the New and Alamo rivers, and located in an irrigated region, will give an account of the effect of irrigation upon the rate of evaporation in the Imperial Valley. The stations at Indio and Mecca are intended to show the effect upon evaporation due to the comparative proximity to the sea, half a mile away at Mecca, and 13 miles away at Indio. These auxiliary stations, taken together with the principal station at the Salt Creek trestle, should enable us to determine the function involved in the C-coefficient, which is as yet unknown, but seems to be necessary for the completion of the formula. The stations at the reservoirs of the Reclamation Service and the Geological Survey, located in different typical places in the United States, will efficiently supplement the Salton Sea work in discussing the action of the formula in different climatic conditions.

GAGES.

The exact height of the water surface in the pan at the time of the observation is the most important, and unfortunately the most difficult observation to make. It

should be determined with an accuracy equal to the one-tenth part of a millimeter, in order to do justice to the requirements of the formula. In the open air when the wind is blowing, especially in the case of pans which are floating, it is very difficult to obtain a still water surface to which such accurate readings of the gage can be referred. It is always necessary to construct some form of a still-well, by means of a tube near the center of the pan, which has a small opening at the bottom. Into this tube the water rises to the gravity level, that is to say, to the average level of the water surface after eliminating the minor waves and fluctuations. With such a still-well a reasonably good level surface of the water can be secured. There are numerous pieces of apparatus designed for measuring such water heights. (1) The "hook gage," in which a submerged hook approaches the surface from the under side, the height being measured by a vernier. (2) The "pin and cup" system, wherein a fixed point in the center of the still-well is used as a point of reference, and the number of cups required to fill up the water to the point is counted. The amount evaporated is determined by the relative area of the pan and a measuring cup whose contents are known, so that the quantity measured by the cup can be interpreted in terms of the height of the added water sheet over the area of the large pan. (3) A "micrometer screw," consisting of a graduated head and screw with a scale, which is moved from a fixed point to touch the water surface, the point of contact being generally well indicated by the sudden change in the shape of the water surface. (4) A "spindle float," carrying a mirror on a metal surface, is read by a micrometer screw at the height of the water level on some reference scale. (5) A "siphon," leading from the center of the large pan to a small auxiliary pan which contains a float, and may be provided with some multiplying device to read the height of the water on a dial scale. (6) A "float in the still-well" of the large pan may be made to register by a self-recording pen on a cylinder driven by clockwork, so as to make an automatic register of the height of the water surface. (7) A "burette tube," consisting of a glass tube 1 centimeter in diameter, with a vertical scale in centimeters and millimeters cut along the side of the tube. The lower end of the tube is drawn out into a neck, and one side of the neck should be ground away so as to leave access for the water into the tube when standing upright in the water and resting on the bottom of the pan. The burette tube is fitted with a small plunger which is moved by the finger to plug the opening at the bottom when the water has risen in it to the gravity level. Immerse the tube in the water, which will rise in the inside up to the gravity level of the outside rough water surface; plug the burette with the plunger and raise the burette to the level of the eye. The surface of the water will form a meniscus, concave downward, and when held against the light the lower edge of the meniscus forms a sharp line across the divisions of the millimeter scale. If the tube is placed on a support for steadiness, one can read to the tenth of a millimeter after a little practise.

The mean of three such readings taken in succession makes a good measurement of the actual height of the water surface from a fixed point in the bottom of the pan. This fixed point is obtained by soldering a smooth copper disk 1 inch in diameter into the center of the pan, and the burette tube should be placed upon this at every reading. The burette tube is the simplest and least expensive apparatus for measuring water heights, and in the hands of good observers it will give excellent results.

All the pieces of apparatus just mentioned have their advantages and defects, which it is not necessary to enumerate. It may be said in a general way that it is not desirable to make an apparatus whose registration is more accurate than the practical setting of the contact point on the water surface. If there is no water surface which can be determined with greater accuracy than the tenth of a millimeter, it is not worth while to make readings to the hundredth of a millimeter, because of the great additional labor involved in the numerous computations. All observations made on a free water surface where no still-well has been constructed should undoubtedly be rejected, except in work which is recognized as rough approximation. Micrometer points which set on a water surface have much less value in the night, and in dark weather, when the reflected image of the micrometer becomes indistinct. If large floats are employed the still-well will be correspondingly large, and in the open air when the wind is blowing it is quite impracticable to keep the float from swaying through several tenths of a millimeter by the mere concussion of the wind. If these floats are protected by glass the apparatus becomes correspondingly more expensive. For preliminary work the burette tube is sufficiently accurate. In a fixed plant, which is likely to have a long period of activity, it would be well to establish an expensive form of gage registration, especially if it can be made self-registering. The labor of reading evaporation apparatus every four hours throughout the day and night is so burdensome that it will hardly be done except in the interest of a strictly scientific research. It is believed that a knowledge of the correct formula will enable us to dispense with all the proposed four-hourly observations except at the hours of minimum, as 5 to 6 a. m., and the hours of maximum, as 1 to 3 p. m. It is also hoped that by means of the formula and tables it will be possible to entirely dispense with the use of evaporation pans and gages, and to compute the amount of the evaporation directly from a few simple meteorological observations, namely, the temperature of the water surface, the vapor pressure at the dew point, the temperature of the air, and the mean velocity of the wind. It would be entirely feasible to make the entire operation self-registering if it were possible to discover any method for accurately determining the vapor pressure of the air at the dew-point temperature by some automatic apparatus, but, in spite of the incessant efforts of meteorologists to devise such a vapor-pressure instrument, nothing of the sort has yet been accomplished. There is a fairly accurate instrument for registering the relative humidity

of the air, and from this the vapor pressure can be computed through the temperature of the dry-bulb thermometer, which can always be made self-registering. This is the nearest approach to an automatic system that now seems possible, but every effort will be made during the Salton Sea campaign to devise some system which will record the vapor pressure of the atmosphere.

RAFT.

The temperature of the water surface is obtained by floating a thermometer so that it will be just submerged beneath the topmost layer of the water. In order to determine the gradient of the vapor pressure near the surface of the water—that is, 1 centimeter above it—wet and dry bulb thermometers are sustained at this elevation by means of a small floating raft. The raft is constructed of pieces of pine wood three-fourths of an inch square, two pieces 13 inches long and two pieces 7 inches long. The 7-inch pieces are tacked upon the top of the 13-inch pieces to form a bridge, so that the crosspieces shall leave 3 inches of the 13-inch pieces projecting outside of them. A centigrade thermometer covered with a glass jacket is attached to the center of the bridge on the lower side and marked S. Two common centigrade thermometers are attached to the upper side of the bridge pieces, so that they are lying halfway between the center and the inner edge of the 13-inch pieces. To one of these thermometers is attached a linen rag long enough to reach over into the water when the raft is floating, and it is marked W, the dry thermometer being marked D. It should be noted that in dry climates evaporation is so rapid that it requires a considerable amount of water to lower the wet-bulb reading to its minimum point. If the rag is wound tight with only one or two layers, it will not carry enough water to bring down the wet-bulb reading to its lowest limit. It is well to wrinkle the linen rag—that is, fold it back and forth in layers one-eighth inch wide before attaching it to the wet bulb. The rag should be placed around the wet bulb rather loosely and then tied tight above the mercury bulb. The thread should now be wound a little loosely along the bulb and tied again below it, but not so tight as to choke the neck of the rag. The same method applies to the wet bulb on the sling psychrometer. Unless this precaution is taken, it will not be generally possible to obtain the lowest reading of the wet-bulb thermometer. On the raft the rag floats in the water, and there is usually enough wind to ventilate it so that it works satisfactorily. At any rate the evaporation from such a rag is so nearly like that of the water surface near by as to make the conditions comparable.

The three thermometers on the raft are attached with wires threaded to small brass screws or by small brass clamps held down by the screws on each side. The notation of lower submerged thermometer S, the upper dry-bulb thermometer D, and the wet-bulb thermometer W is preserved throughout the computations to distinguish them from the dry bulb t and wet bulb t_1 on the sling psychrometer. This

raft with its thermometers will float in quite rough water without wetting the dry bulb. Its dimensions are such that it protects the thermometers from hitting the pan. In making the observations the raft should be laid into the water and left during the time taken for reading the sling psychrometer, the anemometer, and the water-gauge tube. After that the three thermometers will have reached their proper readings, and these should be taken without lifting the raft from the water. After the observations are over remove the raft from the pan, and stand it on end in a basket so that the bulbs will be on the lower side. This position will keep the columns of mercury from breaking and ready for immediate use. A small square wicker basket, 8 or 10 inches square and 12 inches high, should always be provided for keeping the apparatus. By means of strings, a proper compartment may be made for the raft so that it shall stand across the middle of the basket. In one corner should be made a place for the psychrometer, and in another corner a place for the burette tube, and in case work is done upon the towers it is convenient to have placed in the bottom of the basket a galvanized-iron cup of water for wetting the rag of the wet-bulb thermometer attached to the psychrometer. Never lay the thermometers down on the platforms; always put them into the basket to avoid accidental breaking. In case thermometers are broken, send the pieces to the section director of the State and request a new supply. Pieces must be returned to comply with the regulations regarding property.

PSYCHROMETER.

In the ordinary sling psychrometer, consisting of a handle joined by a link to a metal back with two centigrade thermometers attached, a wet rag is fastened to the thermometer which projects lowest from the metal frame marked t_1, and the rag should be tied on in the way that has been described above. In making the observations dip the wet bulb with the rag into the cup of water and swing it vigorously for two or three minutes. Make the readings of each thermometer, calling the dry bulb t and the wet bulb t_1. Dip the wet bulb again and swing it about half the time occupied by the first swing. In this way make three readings in succession. It is not necessary to discuss the question whether the readings of these thermometers would be different if they were protected by a shade or shelter of some sort. The readings are made in the sun and wind just as they occur in the open air, and the constants of the formula adjust themselves up to this condition; as a matter of fact the resulting ratios are identical. It is much simpler and more natural to make these readings in the open, because any type of shelter introduces various additional considerations. A series of experiments with the sling psychrometer, in the shade as was afforded by the upper platforms at the towers in Reno, Nev., and in the open, did not seem to indicate any important difference in the computed results. Furthermore,

these readings of the thermometers are merely to form the arguments in a table constructed to give the vapor pressure, while these are combined into a ratio in the formula, and on that account some range of the temperature readings does not introduce into the final result an error that is worth considering. Three readings are made of the sling psychrometer, three are made of the burette gage tube, and one reading is made of each of the thermometers on the raft. Aside from the anemometer these constitute a complete set of observations at a given hour. If the observations are taken four hours apart the difference between the readings of the gage gives the height of the water which has been lost during the interval of four hours through evaporation, provided, of course, there has been no rain. Since the thermometer readings apply strictly to the time at which they were taken, namely, the hours of observation indicated in this schedule, 2, 6, and 10 a. m., and 2, 6, and 10 p. m., while the amount of evaporation is that which has gone on during the time between these hours taken in pairs, it follows that we must adjust temperature conditions in the formula to cover the successive four-hour intervals and not use the temperatures at either end of it. If the evaporation is an integral of the conditions during four hours, we should in point of fact use the integral temperature condition during these same hours. The hours of observation have been so chosen that by taking the mean values of the temperature conditions at the successive pairs of hours during the day, the function in the formula for the evaporation and for the meteorological conditions are comparable. This will be explained a little more fully in connection with an example. It is evidently not proper to compute the evaporation for a given interval of time by means of the meteorological conditions observed at the end of that interval. It would be better to observe directly the meteorological conditions at the middle of the interval, but this would double the number of hours of observation, and it is generally sufficient to take the mean values of the successive pairs.

ANEMOMETER.

The ordinary Weather Bureau Robinson anemometer, which registers the velocity of the wind in miles per hour, has been adapted to read in kilometers per hour by changing the gearing and shortening the arms a little, so that the same dial scale is employed in both cases, though differently interpreted. The dial consists of two graduated wheels which move so that one wheel rotates faster than the other, and both wheels rotate past a fixed point. There are two marks to read on the dials. The inner wheel is graduated from 0, for every 10 kilometers, around to 990 kilometers, which again coincides with the 0-line. Ten kilometers are lost in the combined rotation of the pair. The outer wheel carries a 0-mark and there is another 0-mark on a fixed peg outside the larger wheel. Read the kilometers up to the given 10 on the inner wheel, and the units and decimals on the outer wheel.

For example, 660 kilometers on the inner wheel, and 6.3 on the outer wheel, which combined makes 666.3. The anemometer is to be read at the time of the observation, and if the observations are three hours or four hours apart, the difference between the two successive readings divided by the interval in hours gives the velocity of the wind per hour.

The anemometer is to be mounted on a firm support so that the cups will rotate in a horizontal plane, and there should be no vibration communicated to the cups on account of looseness, or lack of stiffness in the upright support. An iron tube for a pin driven into a solid piece of wood makes a good support to which the anemometer tube can be screwed. On the back side of the tube opposite the dial there is an oil cap, and when this is removed the lower end of the vertical spindle and its pivot are exposed. This should be kept clean, free from dust or grit, and it should be oiled every week or ten days, so that there shall be maintained a uniform friction for the rotating part. It is very necessary to keep the friction uniform, or else there will be a modification of the speed of rotation. There is a brass nut at the top of the standard which can be turned out by a small wrench, and this will admit of the removal of the upright spindle whenever required. In the evaporation work it will usually be sufficient to read the anemometer to the kilometers as units, omitting the tenths. It should be noted that the observed readings taken from the anemometer dial should have a certain correction to reduce them to actual readings. A table for the corrected wind velocities, as indicated by the Robinson anemometer in miles per hour, may be found in the Monthly Weather Review, October, 1906, in paper No. 8, Studies on the Thermodynamics of the Atmosphere, Table 64. A corresponding table in kilometers per hour can be easily computed from this table. The correction amounts to a large figure at very high velocities, but it is now thought that this whole subject should be revised by experiment, especially since there is some doubt about the correction above 30 miles per hour. We have not attempted to apply the correction in evaporation work, though it should not be omitted in case of very refined experimental observations.

STANDS.

Except for the station at the Salton Sea, where special experiments are carried on, it has been thought sufficient to arrange at all secondary stations for two evaporating pans; one on the ground and one on a stand 10 feet high. There are several theoretical reasons for requiring the evaporation at the surface of the water, or on the ground, and the simultaneous evaporation about 3 meters or 10 feet above the lower pan. The accompanying diagram of an observing stand for evaporation gives the working drawings for constructing a suitable stand. The stand carries one middle platform 5 feet above the ground, and another platform 3 feet square 10

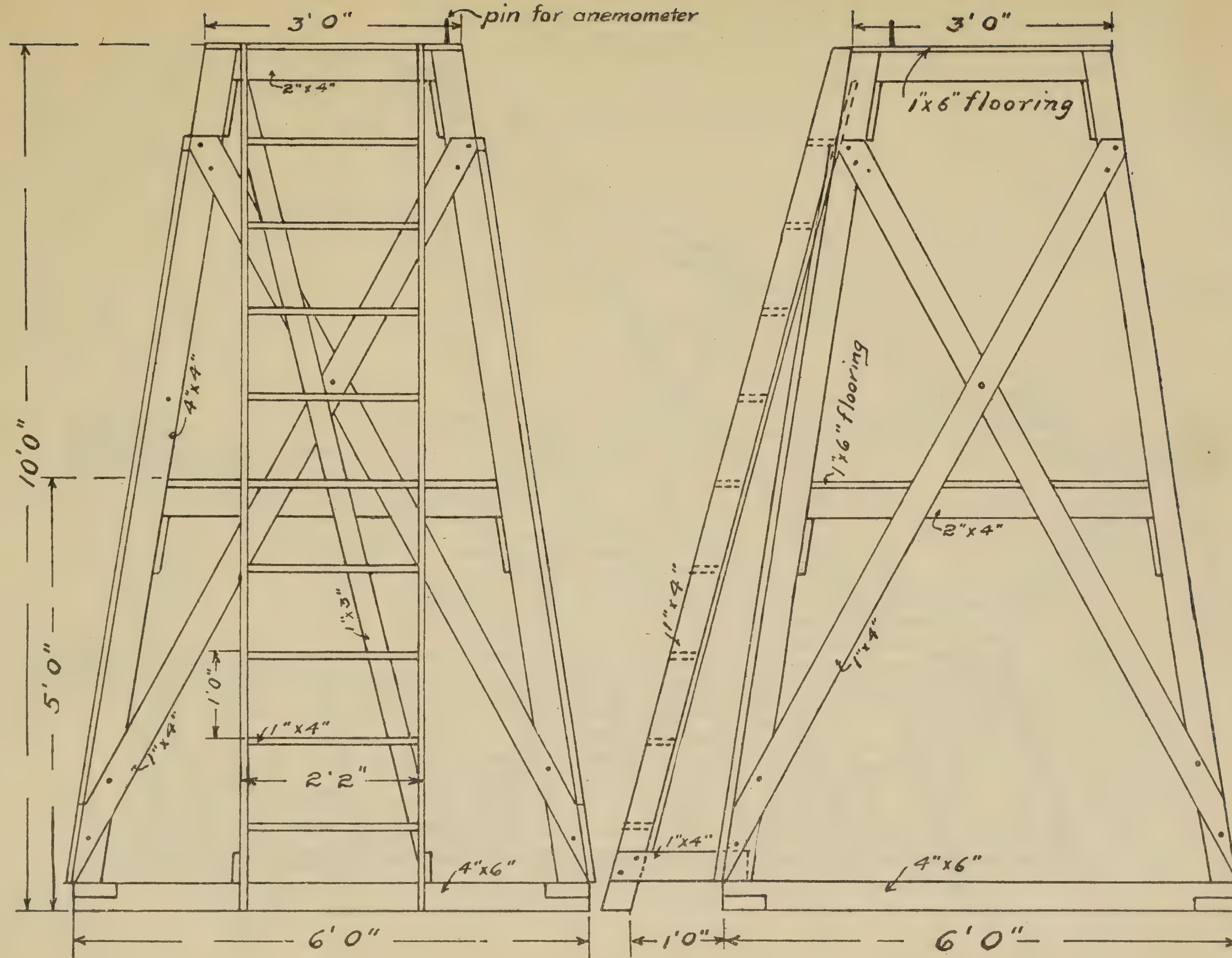
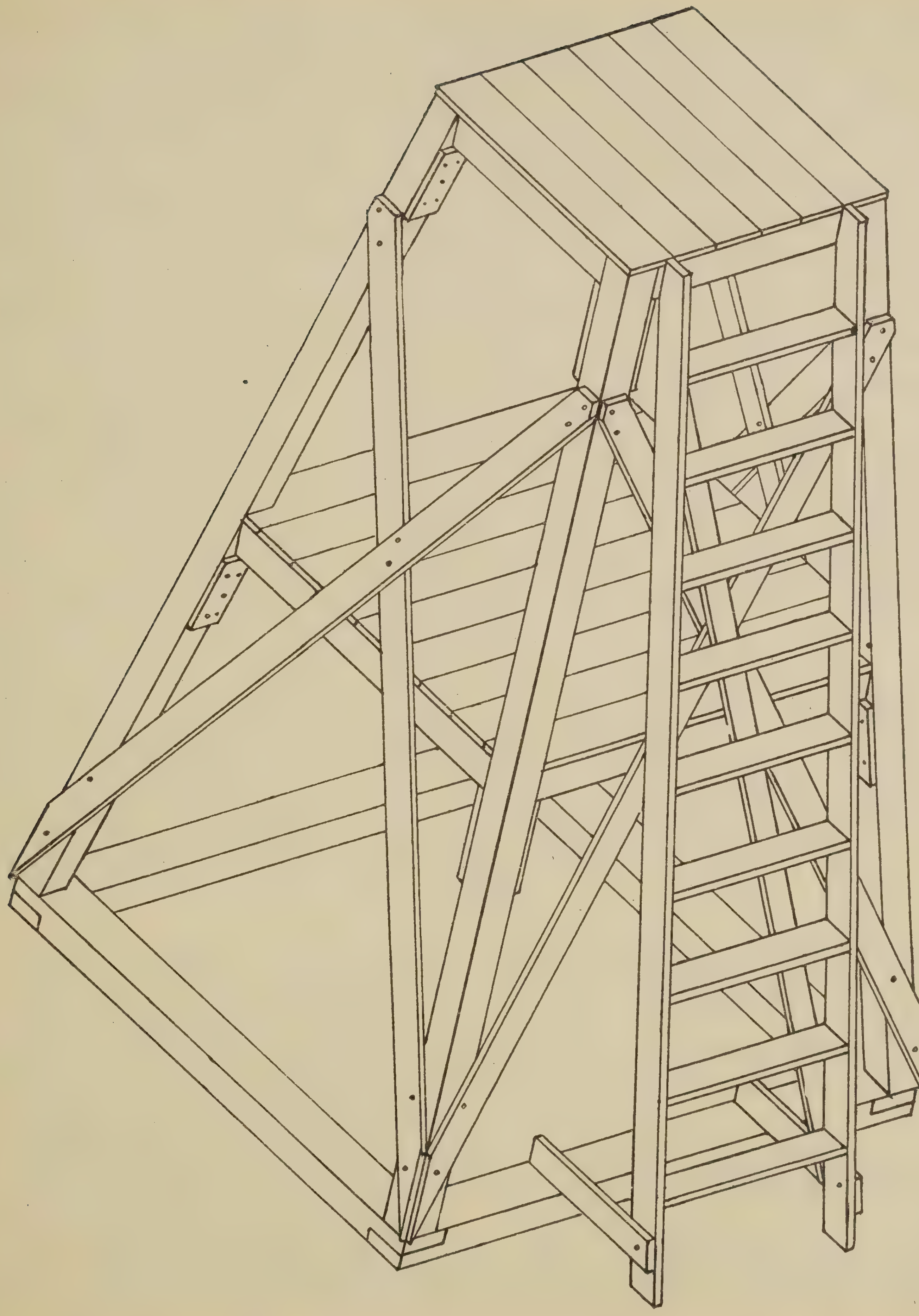


FIG. 2.—WORKING DRAWINGS FOR CONSTRUCTING AN EVAPORATION STAND.



feet above the ground. Place on the upper platform a 2-foot pan or a 3-foot pan for evaporation. The peg indicates the place for the anemometer, which will revolve with its cups just above the water in the pan. The lower platform is intended to carry the ordinary Weather Bureau shelter with its maximum and minimum thermometers, such as are used in the ordinary cooperative climatological observations. Whenever practicable it is well to unite the observations for climatology and evaporation at the same place, and this stand is made convenient for that purpose. The stand should be located in such a way on the ground that the ladder is on the *south* side. The Weather Bureau shelter will then open toward the *north*. In a line due south of the center of the stand place the second evaporation pan on the ground 4 or 5 feet distant. The pans are, of course, then in a due north and south direction, the pan on the ground being to the south of the pan on the stand. It will usually be advisable if not necessary to surround the stand and its pans with a wire screen fence, to keep off animals and intruders from the water in the evaporating pans. Posts united by a 4-foot wire netting, with a suitable gate and lock at one corner, can be conveniently constructed. The stands usually cost about $25 to make and erect, and they may be painted with two or three coats of white lead paint. In the very dry desert climates it is well to paint with asphaltum paint, as this prevents the wood from cracking. Such stands when once made will last many years, and will become a center of meteorological work for a very valuable station.

The pans on the ground are set on a strong frame, the square dimensions being somewhat larger than the diameter of the pan. The frame should be built of 4 by 4 inch pieces firmly jointed at the corner, and a crosspiece should run through the center to support rigidly the middle of the pan. For 6-foot pans a double cross piece at the center is essential. If there is any evidence of wrinkling of the iron of the bottom of the pan, attach it firmly to the crosspieces by angle irons.

10. Tables.

In order to facilitate the discussion of the observations on evaporation it has been found convenient to construct seven tables for computing the various quantities which occur in the discussion.

Table 1. *The vapor pressure in millimeters for stations near the sea level.*—In this table the barometric pressure is 760 millimeters, and the table is available for stations within 1,000 feet of the sea level.

Table 2.—Table 2 is similar to Table 1, but it has been computed for the barometric pressure 645 millimeters, and it is generally available for evaporation stations on the Rocky Mountain plateau.

Since these tables are employed simply to obtain an argument for entering Table 6, it is not necessary to use more than these two tables for the ordinary experiments

on evaporation in the United States. The arguments for using these tables are the readings of the wet-bulb thermometer t_1 on the left-hand column, and the difference between the readings of the dry and the wet bulb thermometers $t-t_1$ on the upper line. With these two arguments, t_1 and $t-t_1$, by interpolation in the body of the table the vapor pressure in millimeters is immediately found. The left-hand column in the body of the table, under 0, gives the vapor pressure when the air is saturated at the temperature marked t_1. In this case t_1 becomes the same as the dew-point temperature d_1 and the readings of the wet and dry bulb thermometers coincide. The tables have been expanded so fully that there is practically no interpolation except the simple one along the lines from left to right. It should be noted that the differences between the columns on the horizontal lines are about the same, namely, four or five tenths throughout the table, and this greatly facilitates the interpolation of the same.

Table 3. *The pressure of aqueous vapor in saturated air at temperature d.*—This table gives the pressure of the aqueous vapor in saturated air at the temperature of the dew-point *d*. It is the same as Table 43 in the Smithsonian Meteorological Tables, 1907. It gives the vapor pressure for every degree and tenth of the dew-point. If the vapor pressure has been derived from Table 1 or Table 2, the corresponding dew-point is taken from Table 3 by passing from the figure in the body of the table to the temperature argument on the outside.

Table 4. *Relative humidity—Centigrade temperature.*—Table 4 gives the relative humidity, using the centigrade degree temperatures. The argument on the left-hand column is $t-d$, the difference between the dry-bulb and the dew-point temperature. The argument along the upper line is d, the dew-point temperature. This table in part is the same as Table 45, Smithsonian Meteorological Tables, 1907. The value of t is obtained from the dry-bulb thermometer, and the dew-point temperature is computed through the vapor pressure, as given in Tables 1 or 2. The relative humidity is defined as the ratio between the vapor pressure at the dew-point temperature to the vapor pressure at the dry-bulb temperature, after this ratio has been multiplied by 100, so that the relative humidity is expressed in percentages.

Table 5 is an auxiliary table used for computing Table 6, which is constructed to give the amount of evaporation in four hours during calm weather, assuming that the value of the C-coefficient is equal to 0.100. The terms in the formula are now easily understood from what has been already said without further explanation. For the temperature (of saturation) of the water surface S as an argument in the left-hand column, extract from the Smithsonian Table 43 the vapor pressure of saturation at the temperature S from 0 to 40 degrees and call this e_s. Take the column de for the difference between the values in the column e_s. They express the change in the vapor pressure from one degree of the saturated temperature to the next degree, and

they are the rate of change actually taking place at the middle of the interval. Compute the mean values of the successive pairs of de, and write them in the column $\frac{de}{dS}$. This is the value of the differential ratio expressing the rate of the change of the vapor pressure to the change in the temperature at the points indicated in the 0-column argument e_s. Multiply the numbers in the columns e_s by those in $\frac{de}{dS}$ for the column $e_s \frac{de}{dS}$. Finally, multiply this by 0.100, the assumed value of the C-coefficient $C = 0.100$ for the values in the last column. If these numbers are divided in succession by certain values of e_d the vapor pressure at the dew-point, we shall have the first term in the evaporation formula E_1.

TABLE 6 has been computed from values of e_d from 3.0 to 20.0 for every tenth millimeter of the vapor pressure, and for every degree of the temperature argument S from 0 to 40 degrees. Table 6 gives the amount of evaporation in four hours expressed in centimeters, on the assumption that the C-coefficient is 0.100. We know that the value of the C-coefficient is not a constant, and it is not equal to 0.100 at all stations, but since it is not far from this value at Reno, Nev., it is convenient to adopt it for the sake of furthering the practical work of the computations and discussion. The coefficient C contains some function which is not yet understood, and it is our purpose to so arrange the observations and their discussion as to bring this term prominently forward, with the hope of discovering what the function is that the formula requires for its completion.

TABLE 7 uses as its argument the velocity of the wind in kilometers per hour, w, as obtained from the anemometer, which is placed in the left-hand column. The values of E_1 derived from Table 6 is the other argument along the top line of the table. With these two arguments E_2 is taken from the body of the table, and it expresses the amount of evaporation due to the action of the wind under these conditions. This process enables us to secure the evaporation as a function of the temperature in calm weather by itself, and the amount of evaporation to be added to this which is due to the effect of the wind. They can be studied separately in the further developments of the formula.

11. Examples of the Method of Recording the Observations and Making the Computations.

In order to illustrate the method of recording the observations and making the computations, an example is taken from the work at Reno, Nev., in August, 1907. At that station the observations were made every three hours, so that these observations in the example at 2 p. m. are to be compared with those which were made

at 11 a. m. It has since then been found practicable to construct the diurnal curve by using observations every four hours apart instead of every three hours apart, so that the work in the future will be based on a four-hour interval instead of a three-hour interval, according to which this example is computed. The principal point to note is that under the values of the anemometer A, under the sum E, under evaporation E_o, there are differences to be taken between the observations as given at 2 p. m. and 11 a. m. in our example, but in the practical work of the future the differences are to be taken from 10 a. m. to 2 p. m., and so on for the other hours of the day. Similarly, the resultant coefficient here computed is for the three hours, but for the four-hour interval it should be multiplied by $4/3=1.33$.

On the top line write down the hour of the observation and the number of the pan. The page is arranged to carry observations at the same hour and for the same pan on ten different dates. These dates may or may not be in the succession of the calendar. In the ordinary course of events there will be collected together on the same page ten observations made on the same pan, at the same hour in the day, and practically in the same month of the year. The mean values of the ten observations will tend to eliminate the local variable meteorological conditions which occur in all of this type of observations. Under column 2 write in the year and the date of each observation. Under the group marked "Air" are found under t three readings of the dry-bulb thermometer and their mean value; under t_1 three readings of the wet-bulb thermometer and their mean value; under $t-t_1$ the difference between the mean dry and the mean wet-bulb thermometers. Thus under August 12 we have:

$$t=31.8 \qquad t_1=16.5 \qquad t-t_1=15.3.$$

Entering Table 2 in this case for the Rocky Mountain plateau with the argument 16.5 in the left-hand column and 15.3 along the top line, take out the vapor pressure $e_d=7.3$, which is the vapor pressure at the dew-point temperature. Two other vapor pressures, e_s, e_r, are written above in the same column, and these can be explained as follows: Under the section marked "Water," as already explained, there are on the raft three thermometers, S submerged, D dry bulb, W wet bulb, carried on the raft. S is on the under side of the bridge; D and W are on the upper side of it. D and D–W are the arguments for the saturated vapor pressure e_r on the raft, about 1 centimeter above the water surface from which quantities it can be computed. In the example for August 12, S is 28.0, D is 29.8, W is 16.8. Taking the difference between D and W, which is 13.0, we have for the arguments in Table 2, 16.8 and 13.0, which give the vapor pressure $e_r=8.6$. Enter Table 3 with the argument S in this case 28.0 for the saturated vapor pressure, $e_s=28.1$. We have now three vapor pressures given, e_s the vapor pressure at the water surface, e_r vapor pressure due to evaporation 1 centimeter above this, e_d the vapor pressure

in the free air 1 or 2 feet above the water surface. Near the water surface the vapor pressure is due to the molecular bombardment, that is, from e_s to e_r, while e_d is the vapor pressure of the air as it blows over the water 1 or 2 feet above its surface. The values $\frac{e_s}{e_d}$, namely, the upper figure divided by the lower, is the value for the gradient which is used in the formula. It has been shown by computation that the ratio $\frac{e_s}{e_r}$ can be equally well utilized in computing the coefficient C, though, of course, it gives a different value of it. It is the interrelation of these three vapor pressures and the temperature of the water surface which seem to be principally concerned in determining the rate of the evaporation.

For the principal computations we need, as already explained, simply the arguments S and e_d, in this case 28.0 and 7.3. Entering Table 6 with these arguments, take out the value of the first term of the evaporation, $E_1 = 0.63$.

Under the section wind we have the anemometer reading at a given hour 98, and the anemometer reading at the preceding hour, 11 a. m. in this case, 85 brought forward for convenience, though the numbers in italics need not regularly be written down on the successive pages. Take the difference between 85 and 98, which is 13; divide by 3, the interval of time in hours elapsed, and we have $w = 4$, the wind velocity in kilometers per hour. The direction of the wind is noted under the column heading, "Dir." In Table 7, with the arguments $E_1 = 0.63$ and $w = 4$, we find $E_2 = 0.04$, which is the effect of the wind upon evaporation. Under the column "Sum" add $E_1 = 0.63$ and $E_2 = 0.04$ to make $E = 0.67$. Since we must have the average evaporation during the interval from 11 a. m. to 2 p. m. in this case, the value of the evaporation as computed in a similar manner for 11 a. m. has been brought forward and written in italics, 0.55. Take the mean value of 0.55 and 0.67 for $E_m = \frac{E_{11} + E_2}{2}$ or $E_m = 0.61$, which is the mean evaporation during the interval 11 a. m. to 2 p. m. as computed by the formula. In the section, "Evap.," under column *h* we have three readings of the water-gauge tube, and the mean value is 12.93. Bring forward the corresponding value of the water height as taken at 11 a. m., 13.36; subtract 12.93 from 13.36, which gives $E_o = 0.43$. If the value of the C_1-coefficient as adopted, namely, $C_1 = 0.100$, had been correct, these values of E_m and E_o would have been the same. Since they are different we take the ratio $\frac{E_o}{E_m}$ and place this in the last column marked "coefficient C." In the example for August 12 it is 0.70. It is the purpose of these observations to compute many values of this coefficient ratio, as 0.70, 0.83, 0.74, in different places having the same general

climate. For example, at a given reclamation project, from a pan in the water and from a pan 10 feet above the water; from a pan on the ground in the midst of an alfalfa field and from a pan on a stand 10 feet above the ground; from a pan on the ground in a dry place, that is, at a considerable distance away from the reservoir and from an irrigated field, and from a pan on a stand 10 feet above the ground. This will give us the variations of the coefficient at different localities of the same climate. By means of the work at the Salton Sea and the several reservoirs of the Reclamation Service and the Geological Survey, we shall find values of the C-coefficient in the different climates. It seems necessary to make all these observations in order to provide material for the further discussion of the adopted evaporation formula.

It is often convenient to compute the dew-point and relative humidity, and examples are given for the same dates, August 12, August 13, August 14. With the argument t as for August 12, 31.8, take the vapor pressure from the saturated Table 3, which gives $e_t = 34.9$. Having the saturated vapor pressure $e_d = 7.3$ for the dew-point temperature, take the corresponding dew-point $d = 6.7$ from the same table. Take the difference $t-d = 31.8 - 6.7 = 25.1$. With the arguments $t-d = 25.1$ and $d = 6.7$ in Table 4 take out the relative humidity, 21 per cent. This can be checked on dividing e_d by e_t, in this case $\frac{7.3}{34.9} = 21$ per cent. The precepts which follow define the meaning of the terms as already explained, and are given for convenient reference.

Examples of the Method of Recording the Observations and Making the Computations.

RENO, NEVADA.

EVAPORATION OBSERVATIONS.

Hour, 2 p. m. **Pan,** 2.

No.	DATE.	AIR.				WATER.		WIND.				SUM.		EVAP.		COEF.
		t	t_1	$t-t_1$	e_s e_r e_d	S D W	E_1	A	Dir.	w	E_2	E	E_m	h	E_o	C
	1907.															
								85				*0.55*				
1	Aug. 12	31.2	17.0		28.1	28.0	0.63	98	W	4	0.04	0.67	0.61	12.85	*13.36*	
		32.0	16.4		8.6	29.8								13.00	0.43	0.70
		32.1	16.2		7.3	16.8								12.93		
		31.8	16.5	15.3										12.93		
								248				*0.28*				
2	Aug. 13	28.0	16.2		22.8	24.5	0.38	268	W	7	0.05	0.43	0.36	12.35		
		28.8	15.8		7.0	28.0								12.40	*2.70*	
		29.0	16.2		8.2	15.0								12.45	0.30	0.83
		28.6	16.1	12.5										12.40		
								405				*0.46*				
3	Aug. 14	28.3	14.8		23.9	25.3	0.54	432	S W	9	0.08	0.62	0.54	12.00		
		28.7	14.3		8.7	29.1								12.05	*12.45*	0.74
		28.4	15.0		6.4	16.7								12.10	0.40	
		28.5	14.7	13.8										12.05		

TO COMPUTE THE DEW POINT AND RELATIVE HUMIDITY $= \frac{e_d}{e_t}$.

Date.	Aug. 12.	Aug. 13.	Aug. 14.
t d	31.8 34.9 $=e_t$ 6.7 7.3 $=e_d$	28.6 29.1 $=e_t$ 8.4 8.2 $=e_d$	28.5 28.9 $=e_t$ 4.8 6.4 $=e_d$
$t-d$	25.1	20.2	23.7
Table 4	21% 21%	28% 28%	22% 22%

THE ADOPTED NOTATION.

	t = dry bulb temperature, t_1 = wet bulb temperature.
Table 2	$t-t_1$ = difference. t_1 and $(t-t_1)$ are the arguments for e_d.
Table 3	S = temperature of water surface. S is the argument for e_s.
	D = dry bulb, and W = wet bulb on the raft.
Table 2	W and D–W are the arguments for e_r.
Table 3	t is the argument for e_t.
Table 3	e_d is the argument for d.

TABLES FOR THE COMPUTATION OF EVAPORATION OBSERVATIONS.

TABLE 1.—*The vapor pressure in millimeters for stations near the sea level.*

B=760 mm.

$t-t_1$	0	1	2	3	4	5	6	7	8	9	10
t_1 0.0	4.6	4.1	3.6	3.1	2.6	2.1	1.6	1.1	0.6	0.1	
0.2	4.6	4.1	3.6	3.1	2.6	2.1	1.6	1.1	0.6	0.1	
0.4	4.7	4.2	3.7	3.2	2.7	2.2	1.7	1.2	0.7	0.2	
0.6	4.8	4.3	3.8	3.3	2.8	2.3	1.8	1.3	0.8	0.3	
0.8	4.8	4.3	3.8	3.3	2.8	2.3	1.8	1.3	0.8	0.3	
1.0	4.9	4.4	3.9	3.4	2.9	2.4	1.9	1.4	0.9	0.4	
1.2	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.5	
1.4	5.1	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.5	
1.6	5.1	4.6	4.1	3.6	3.1	2.6	2.1	1.6	1.1	0.6	0.1
1.8	5.2	4.7	4.2	3.7	3.2	2.7	2.2	1.7	1.2	0.7	0.2
2.0	5.3	4.8	4.3	3.8	3.3	2.8	2.3	1.8	1.2	0.7	0.2
2.2	5.4	4.8	4.3	3.8	3.3	2.8	2.3	1.8	1.3	0.8	0.3
2.4	5.4	4.9	4.4	3.9	3.4	2.9	2.4	1.9	1.4	0.9	0.4
2.6	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.5
2.8	5.6	5.1	4.6	4.1	3.6	3.1	2.6	2.1	1.6	1.1	0.5
3.0	5.7	5.2	4.7	4.2	3.7	3.1	2.6	2.1	1.6	1.1	0.6
3.2	5.7	5.2	4.7	4.2	3.7	3.2	2.7	2.2	1.7	1.2	0.7
3.4	5.8	5.3	4.8	4.3	3.8	3.3	2.8	2.3	1.8	1.3	0.8
3.6	5.9	5.4	4.9	4.4	3.9	3.4	2.9	2.4	1.9	1.4	0.9
3.8	6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0
4.0	6.1	5.6	5.1	4.6	4.1	3.6	3.1	2.5	2.0	1.5	1.0
4.2	6.2	5.6	5.1	4.6	4.1	3.6	3.1	2.6	2.1	1.6	1.1
4.4	6.2	5.7	5.2	4.7	4.2	3.7	3.2	2.7	2.2	1.7	1.2
4.6	6.3	5.8	5.3	4.8	4.3	3.8	3.3	2.8	2.3	1.8	1.3
4.8	6.4	5.9	5.4	4.9	4.4	3.9	3.4	2.9	2.4	1.9	1.4
5.0	6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5
5.2	6.6	6.1	5.6	5.1	4.6	4.1	3.6	3.1	2.6	2.1	1.6
5.4	6.7	6.2	5.7	5.2	4.7	4.2	3.7	3.2	2.7	2.1	1.6
5.6	6.8	6.3	5.8	5.3	4.8	4.3	3.8	3.2	2.7	2.2	1.7
5.8	6.9	6.4	5.9	5.4	4.9	4.4	3.9	3.3	2.8	2.3	1.8
6.0	7.0	6.5	6.0	5.5	4.9	4.4	3.9	3.4	2.9	2.4	1.9
6.2	7.1	6.6	6.1	5.6	5.0	4.5	4.0	3.5	3.0	2.5	2.0
6.4	7.2	6.7	6.2	5.7	5.1	4.6	4.1	3.6	3.1	2.6	2.1
6.6	7.3	6.8	6.2	5.7	5.2	4.7	4.2	3.7	3.2	2.7	2.2
6.8	7.4	6.9	6.3	5.8	5.3	4.8	4.3	3.8	3.3	2.8	2.3
7.0	7.5	7.0	6.5	6.0	5.4	4.9	4.4	3.9	3.4	2.9	2.4
7.2	7.6	7.1	6.6	6.1	5.5	5.0	4.5	4.0	3.5	3.0	2.5
7.4	7.7	7.2	6.7	6.2	5.6	5.1	4.6	4.1	3.6	3.1	2.6
7.6	7.8	7.3	6.8	6.3	5.8	5.2	4.7	4.2	3.7	3.2	2.7
7.8	7.9	7.4	6.9	6.4	5.9	5.4	4.8	4.3	3.8	3.3	2.8
8.0	8.0	7.5	7.0	6.5	6.0	5.5	5.0	4.4	3.9	3.4	2.9

TABLE 1.—*The vapor pressure in millimeters for stations near the sea level.*

B=760 mm.

$t-t_1$	11	12	13	14	15	16	17	18	19	20
t_1 0.0										
0.2										
0.4										
0.6										
0.8										
1.0										
1.2										
1.4										
1.6										
1.8										
2.0										
2.2										
2.4										
2.6										
2.8										
3.0	0.1									
3.2	0.2									
3.4	0.3									
3.6	0.4									
3.8	0.4									
4.0	0.5									
4.2	0.6	0.1								
4.4	0.7	0.2								
4.6	0.8	0.3								
4.8	0.9	0.4								
5.0	1.0	0.5								
5.2	1.1	0.5								
5.4	1.1	0.6	0.1							
5.6	1.2	0.7	0.2							
5.8	1.3	0.8	0.3							
6.0	1.4	0.9	0.4							
6.2	1.5	1.0	0.5							
6.4	1.6	1.1	0.6	0.1						
6.6	1.7	1.2	0.7	0.2						
6.8	1.8	1.3	0.8	0.3						
7.0	1.9	1.4	0.9	0.4						
7.2	2.0	1.5	1.0	0.5						
7.4	2.1	1.6	1.1	0.6	0.1					
7.6	2.2	1.7	1.2	0.7	0.2					
7.8	2.3	1.8	1.3	0.8	0.3					
8.0	2.4	1.9	1.4	0.9	0.4					

e_0=the saturated vapor pressure.
t =dry-bulb temperature.
t_1=wet-bulb temperature.

Formula: $e=e_0-0.00066B(t-t_1)\left(1+\frac{t_1}{873}\right)$.

TABLE I.—*The vapor pressure in millimeters for stations near the sea level*—Continued.

B=760 mm.

$t-t_1$	0	1	2	3	4	5	6	7	8	9	10
t_1 8.0	8.0	7.5	7.0	6.5	6.0	5.5	5.0	4.4	3.9	3.4	2.9
8.2	8.1	7.6	7.1	6.6	6.1	5.6	5.1	4.6	4.0	3.5	3.0
8.4	8.2	7.7	7.2	6.7	6.2	5.7	5.2	4.7	4.2	3.7	3.1
8.6	8.3	7.8	7.3	6.8	6.3	5.8	5.3	4.8	4.3	3.8	3.3
8.8	8.4	7.9	7.4	6.9	6.4	5.9	5.4	4.9	4.4	3.9	3.4
9.0	8.6	8.0	7.5	7.0	6.5	6.0	5.5	5.0	4.5	4.0	3.5
9.2	8.7	8.2	7.6	7.1	6.6	6.1	5.6	5.1	4.6	4.1	3.6
9.4	8.8	8.3	7.8	7.3	6.8	6.2	5.7	5.2	4.7	4.2	3.7
9.6	8.9	8.4	7.9	7.4	6.9	6.4	5.9	5.3	4.8	4.3	3.8
9.8	9.0	8.5	8.0	7.5	7.0	6.5	6.0	5.5	5.0	4.5	3.9
10.0	9.1	8.6	8.1	7.6	7.1	6.6	6.1	5.6	5.1	4.6	4.1
10.2	9.3	8.8	8.2	7.7	7.2	6.7	6.2	5.7	5.2	4.7	4.2
10.4	9.4	8.9	8.4	7.9	7.4	6.9	6.3	5.8	5.3	4.8	4.3
10.6	9.5	9.0	8.5	8.0	7.5	7.0	6.5	6.0	5.4	4.9	4.4
10.8	9.6	9.1	8.6	8.1	7.6	7.1	6.6	6.1	5.6	5.1	4.6
11.0	9.8	9.3	8.8	8.3	7.7	7.2	6.7	6.2	5.7	5.2	4.7
11.2	9.9	9.4	8.9	8.4	7.9	7.4	6.9	6.3	5.8	5.3	4.8
11.4	10.0	9.5	9.0	8.5	8.0	7.5	7.0	6.5	6.0	5.5	5.0
11.6	10.2	9.7	9.1	8.6	8.1	7.6	7.1	6.6	6.1	5.6	5.1
11.8	10.3	9.8	9.3	8.8	8.3	7.8	7.3	6.7	6.2	5.7	5.2
12.0	10.4	9.9	9.4	8.9	8.4	7.9	7.4	6.9	6.4	5.9	5.4
12.2	10.6	10.1	9.6	9.0	8.5	8.0	7.5	7.0	6.5	6.0	5.5
12.4	10.7	10.2	9.7	9.2	8.7	8.2	7.7	7.2	6.6	6.1	5.6
12.6	10.8	10.3	9.8	9.3	8.8	8.3	7.8	7.3	6.8	6.3	5.8
12.8	11.0	10.5	10.0	9.5	9.0	8.4	7.9	7.4	6.9	6.4	5.9
13.0	11.1	10.6	10.1	9.6	9.1	8.6	8.1	7.6	7.1	6.6	6.0
13.2	11.3	10.8	10.3	9.8	9.2	8.7	8.2	7.7	7.2	6.7	6.2
13.4	11.4	10.9	10.4	9.9	9.4	8.9	8.4	7.9	7.4	6.8	6.3
13.6	11.6	11.1	10.6	10.1	9.5	9.0	8.5	8.0	7.5	7.0	6.5
13.8	11.7	11.2	10.7	10.2	9.7	9.2	8.7	8.2	7.7	7.1	6.6
14.0	11.9	11.4	10.9	10.4	9.8	9.3	8.8	8.3	7.8	7.3	6.8
14.2	12.0	11.5	11.0	10.5	10.0	9.5	9.0	8.5	8.0	7.5	6.9
14.4	12.2	11.7	11.2	10.7	10.2	9.6	9.1	8.6	8.1	7.6	7.1
14.6	12.4	11.8	11.3	10.8	10.3	9.8	9.3	8.8	8.3	7.8	7.3
14.8	12.5	12.0	11.5	11.0	10.5	10.0	9.4	8.9	8.4	7.9	7.4
15.0	12.7	12.2	11.6	11.1	10.6	10.1	9.6	9.1	8.6	8.1	7.6
15.2	12.8	12.3	11.8	11.3	10.8	10.3	9.8	9.3	8.8	8.2	7.7
15.4	13.0	12.5	12.0	11.5	11.0	10.4	9.9	9.4	8.9	8.4	7.9
15.6	13.2	12.7	12.1	11.6	11.1	10.6	10.1	9.6	9.1	8.6	8.1
15.8	13.3	12.8	12.3	11.8	11.3	10.8	10.3	9.8	9.3	8.7	8.2
16.0	13.5	13.0	12.5	12.0	11.5	11.0	10.4	9.9	9.4	8.9	8.4

TABLE 1.—*The vapor pressure in millimeters for stations near the sea level*—Continued.

B=760 mm.

$t-t_1$	11	12	13	14	15	16	17	18	19	20
t_1 8.0	2.4	1.9	1.4	0.9	0.4					
8.2	2.5	2.0	1.5	1.0	0.5					
8.4	2.6	2.1	1.6	1.1	0.6	0.1				
8.6	2.7	2.2	1.7	1.2	0.7	0.2				
8.8	2.9	2.3	1.8	1.3	0.8	0.3				
9.0	3.0	2.5	2.0	1.5	0.9	0.4				
9.2	3.1	2.6	2.1	1.6	1.1	0.6				
9.4	3.2	2.7	2.2	1.7	1.2	0.7	0.2			
9.6	3.3	2.8	2.3	1.8	1.3	0.8	0.3			
9.8	3.4	2.9	2.4	1.9	1.4	0.9	0.4			
10.0	3.6	3.1	2.5	2.0	1.5	1.0	0.5			
10.2	3.7	3.2	2.7	2.2	1.6	1.1	0.6	0.1		
10.4	3.8	3.3	2.8	2.3	1.8	1.3	0.8	0.3		
10.6	3.9	3.4	2.9	2.4	1.9	1.4	0.9	0.4		
10.8	4.1	3.5	3.0	2.5	2.0	1.5	1.0	0.5		
11.0	4.2	3.7	3.2	2.7	2.2	1.6	1.1	0.6	0.1	
11.2	4.3	3.8	3.3	2.8	2.3	1.8	1.3	0.8	0.2	
11.4	4.4	3.9	3.4	2.9	2.4	1.9	1.4	0.9	0.4	
11.6	4.6	4.1	3.6	3.0	2.5	2.0	1.5	1.0	0.5	
11.8	4.7	4.2	3.7	3.2	2.7	2.2	1.7	1.1	0.6	0.1
12.0	4.8	4.3	3.8	3.3	2.8	2.3	1.8	1.3	0.8	0.3
12.2	5.0	4.5	4.0	3.5	2.9	2.4	1.9	1.4	0.9	0.4
12.4	5.1	4.6	4.1	3.6	3.1	2.6	2.1	1.6	1.0	0.6
12.6	5.3	4.7	4.2	3.7	3.2	2.7	2.2	1.7	1.2	0.7
12.8	5.4	4.9	4.4	3.9	3.4	2.8	2.3	1.8	1.3	0.8
13.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0
13.2	5.7	5.2	4.7	4.2	3.6	3.1	2.6	2.1	1.6	1.1
13.4	5.8	5.3	4.8	4.3	3.8	3.3	2.8	2.3	1.8	1.2
13.6	6.0	5.5	5.0	4.4	3.9	3.4	2.9	2.4	1.9	1.4
13.8	6.1	5.6	5.1	4.6	4.1	3.6	3.1	2.6	2.1	1.5
14.0	6.3	5.8	5.3	4.7	4.2	3.7	3.2	2.7	2.2	1.7
14.2	6.4	5.9	5.4	4.9	4.4	3.9	3.4	2.9	2.4	1.8
14.4	6.6	6.1	5.6	5.1	4.5	4.0	3.5	3.0	2.5	2.0
14.6	6.7	6.2	5.7	5.2	4.7	4.2	3.7	3.2	2.7	2.1
14.8	6.9	6.4	5.9	5.4	4.9	4.3	3.8	3.3	2.8	2.3
15.0	7.1	6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5
15.2	7.2	6.7	6.2	5.7	5.2	4.7	4.2	3.7	3.1	2.6
15.4	7.4	6.9	6.4	5.9	5.3	4.8	4.3	3.8	3.3	2.8
15.6	7.6	7.0	6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0
15.8	7.7	7.2	6.7	6.2	5.7	5.2	4.7	4.2	3.6	3.1
16.0	7.9	7.4	6.9	6.4	5.8	5.3	4.8	4.3	3.8	3.3

TABLE 1.—*The vapor pressure in millimeters for stations near the sea level*—Continued.

B=760 mm.

$t-t_1$	0	1	2	3	4	5	6	7	8	9	10
t_1 16.0	13.5	13.0	12.5	12.0	11.5	11.0	10.4	9.9	9.4	8.9	8.4
16.1	13.6	13.1	12.6	12.1	11.6	11.0	10.5	10.0	9.5	9.0	8.5
16.2	13.7	13.2	12.7	12.1	11.6	11.1	10.6	10.1	9.6	9.1	8.6
16.3	13.8	13.3	12.7	12.2	11.7	11.2	10.7	10.2	9.7	9.2	8.7
16.4	13.9	13.3	12.8	12.3	11.8	11.3	10.8	10.3	9.8	9.3	8.7
16.5	14.0	13.4	12.9	12.4	11.9	11.4	10.9	10.4	9.9	9.4	8.8
16.6	14.0	13.5	13.0	12.5	12.0	11.5	11.0	10.5	10.0	9.4	8.9
16.7	14.1	13.6	13.1	12.6	12.1	11.6	11.1	10.5	10.0	9.5	9.0
16.8	14.2	13.7	13.2	12.7	12.2	11.7	11.1	10.6	10.1	9.6	9.1
16.9	14.3	13.8	13.3	12.8	12.3	11.7	11.2	10.7	10.2	9.7	9.2
17.0	14.4	13.9	13.4	12.9	12.4	11.8	11.3	10.8	10.3	9.8	9.3
17.1	14.5	14.0	13.5	13.0	12.4	11.9	11.4	10.9	10.4	9.9	9.4
17.2	14.6	14.1	13.6	13.0	12.5	12.0	11.5	11.0	10.5	10.0	9.5
17.3	14.7	14.2	13.6	13.1	12.6	12.1	11.6	11.1	10.6	10.1	9.6
17.4	14.8	14.2	13.7	13.2	12.7	12.2	11.7	11.2	10.7	10.2	9.6
17.5	14.9	14.3	13.8	13.3	12.8	12.3	11.8	11.3	10.8	10.3	9.7
17.6	15.0	14.4	13.9	13.4	12.9	12.4	11.9	11.4	10.9	10.3	9.8
17.7	15.0	14.5	14.0	13.5	13.0	12.5	12.0	11.5	11.0	10.4	9.9
17.8	15.1	14.6	14.1	13.6	13.1	12.6	12.1	11.6	11.0	10.5	10.0
17.9	15.2	14.7	14.2	13.7	13.2	12.7	12.2	11.6	11.1	10.6	10.1
18.0	15.3	14.8	14.3	13.8	13.3	12.8	12.3	11.7	11.2	10.7	10.2
18.1	15.4	14.9	14.4	13.9	13.4	12.9	12.4	11.8	11.3	10.8	10.3
18.2	15.5	15.0	14.5	14.0	13.5	13.0	12.4	11.9	11.4	10.9	10.4
18.3	15.6	15.1	14.6	14.1	13.6	13.1	12.5	12.0	11.5	11.0	10.5
18.4	15.7	15.2	14.7	14.2	13.7	13.2	12.6	12.1	11.6	11.1	10.6
18.5	15.8	15.3	14.8	14.3	13.8	13.3	12.7	12.2	11.7	11.2	10.7
18.6	15.9	15.4	14.9	14.4	13.9	13.4	12.8	12.3	11.8	11.3	10.8
18.7	16.0	15.5	15.0	14.5	14.0	13.5	12.9	12.4	11.9	11.4	10.9
18.8	16.1	15.6	15.1	14.6	14.1	13.6	13.0	12.5	12.0	11.5	11.0
18.9	16.2	15.7	15.2	14.7	14.2	13.7	13.1	12.6	12.1	11.6	11.1
19.0	16.3	15.8	15.3	14.8	14.3	13.8	13.2	12.7	12.2	11.7	11.2
19.1	16.4	15.9	15.4	14.9	14.4	13.9	13.3	12.8	12.3	11.8	11.3
19.2	16.5	16.0	15.5	15.0	14.5	14.0	13.4	12.9	12.4	11.9	11.4
19.3	16.6	16.1	15.6	15.1	14.6	14.1	13.6	13.0	12.5	12.0	11.5
19.4	16.7	16.2	15.7	15.2	14.7	14.2	13.7	13.1	12.6	12.1	11.6
19.5	16.8	16.3	15.8	15.3	14.8	14.3	13.8	13.2	12.7	12.2	11.7
19.6	16.9	16.4	15.9	15.4	14.9	14.4	13.9	13.3	12.8	12.3	11.8
19.7	17.0	16.5	16.0	15.5	15.0	14.5	14.0	13.4	12.9	12.4	11.9
19.8	17.2	16.6	16.1	15.6	15.1	14.6	14.1	13.6	13.0	12.5	12.0
19.9	17.3	16.7	16.2	15.7	15.2	14.7	14.2	13.7	13.2	12.6	12.1
20.0	17.4	16.8	16.3	15.8	15.3	14.8	14.3	13.8	13.3	12.7	12.2

TABLE 1.—*The vapor pressure in millimeters for stations near the sea level*—Continued.

B=760 mm.

$t-t_1$	11	12	13	14	15	16	17	18	19	20
t_1 16.0	7.9	7.4	6.9	6.4	5.8	5.3	4.8	4.3	3.8	3.3
16.1	8.0	7.5	7.0	6.4	5.9	5.4	4.9	4.4	3.9	3.4
16.2	8.1	7.6	7.0	6.5	6.0	5.5	5.0	4.5	4.0	3.5
16.3	8.1	7.6	7.1	6.6	6.1	5.6	5.1	4.6	4.1	3.6
16.4	8.2	7.7	7.2	6.7	6.2	5.7	5.2	4.7	4.2	3.6
16.5	8.3	7.8	7.3	6.8	6.3	5.8	5.3	4.8	4.2	3.7
16.6	8.4	7.9	7.4	6.9	6.4	5.8	5.3	4.8	4.3	3.8
16.7	8.5	8.0	7.5	7.0	6.5	5.9	5.4	4.9	4.4	3.9
16.8	8.6	8.1	7.6	7.1	6.5	6.0	5.5	5.0	4.5	4.0
16.9	8.7	8.2	7.7	7.1	6.6	6.1	5.6	5.1	4.6	4.1
17.0	8.8	8.3	7.8	7.2	6.7	6.2	5.7	5.2	4.7	4.2
17.1	8.9	8.4	7.8	7.3	6.8	6.3	5.8	5.3	4.8	4.3
17.2	9.0	8.4	7.9	7.4	6.9	6.4	5.9	5.4	4.9	4.4
17.3	9.0	8.5	8.0	7.5	7.0	6.5	6.0	5.5	5.0	4.4
17.4	9.1	8.6	8.1	7.6	7.1	6.6	6.1	5.6	5.0	4.5
17.5	9.2	8.7	8.2	7.7	7.2	6.7	6.2	5.7	5.1	4.6
17.6	9.3	8.8	8.3	7.8	7.3	6.8	6.3	5.7	5.2	4.7
17.7	9.4	8.9	8.4	7.9	7.4	6.9	6.3	5.8	5.3	4.8
17.8	9.5	9.0	8.5	8.0	7.5	7.0	6.4	5.9	5.4	4.9
17.9	9.6	9.1	8.6	8.1	7.6	7.0	6.5	6.0	5.5	5.0
18.0	9.7	9.2	8.7	8.2	7.7	7.1	6.6	6.1	5.6	5.1
18.1	9.8	9.3	8.8	8.3	7.8	7.2	6.7	6.2	5.7	5.2
18.2	9.9	9.4	8.9	8.4	7.8	7.3	6.8	6.3	5.8	5.3
18.3	10.0	9.5	9.0	8.5	7.9	7.4	6.9	6.4	5.9	5.4
18.4	10.1	9.6	9.1	8.6	8.0	7.5	7.0	6.5	6.0	5.5
18.5	10.2	9.7	9.2	8.6	8.1	7.6	7.1	6.6	6.1	5.6
18.6	10.3	9.8	9.3	8.7	8.2	7.7	7.2	6.7	6.2	5.7
18.7	10.4	9.9	9.4	8.8	8.3	7.8	7.3	6.8	6.3	5.8
18.8	10.5	10.0	9.5	8.9	8.4	7.9	7.4	6.9	6.4	5.9
18.9	10.6	10.1	9.6	9.0	8.5	8.0	7.5	7.0	6.5	6.0
19.0	10.7	10.2	9.7	9.1	8.6	8.1	7.6	7.1	6.6	6.1
19.1	10.8	10.3	9.8	9.2	8.7	8.2	7.7	7.2	6.7	6.2
19.2	10.9	10.4	9.9	9.3	8.8	8.3	7.8	7.3	6.8	6.3
19.3	11.0	10.5	10.0	9.4	8.9	8.4	7.9	7.4	6.9	6.4
19.4	11.1	10.6	10.1	9.5	9.0	8.5	8.0	7.5	7.0	6.5
19.5	11.2	10.7	10.2	9.6	9.1	8.6	8.1	7.6	7.1	6.6
19.6	11.3	10.8	10.3	9.8	9.2	8.7	8.2	7.7	7.2	6.7
19.7	11.4	10.9	10.4	9.9	9.3	8.8	8.3	7.8	7.3	6.8
19.8	11.5	11.0	10.5	10.0	9.5	8.9	8.4	7.9	7.4	6.9
19.9	11.6	11.1	10.6	10.1	9.6	9.1	8.5	8.0	7.5	7.0
20.0	11.7	11.2	10.7	10.2	9.7	9.2	8.6	8.1	7.6	7.1

TABLE 1.—*The vapor pressure in millimeters for stations near the sea level*—Continued.

B=760 mm.

$t-t_1$	0	1	2	3	4	5	6	7	8	9	10
t_1 20.0	17.4	16.8	16.3	15.8	15.3	14.8	14.3	13.8	13.3	12.7	12.2
20.1	17.5	17.0	16.4	15.9	15.4	14.9	14.4	13.9	13.4	12.9	12.3
20.2	17.6	17.1	16.6	16.0	15.5	15.0	14.5	14.0	13.5	13.0	12.4
20.3	17.7	17.2	16.7	16.2	15.6	15.1	14.6	14.1	13.6	13.1	12.6
20.4	17.8	17.3	16.8	16.3	15.7	15.2	14.7	14.2	13.7	13.2	12.7
20.5	17.9	17.4	16.9	16.4	15.9	15.3	14.8	14.3	13.8	13.3	12.8
20.6	18.0	17.5	17.0	16.5	16.0	15.5	14.9	14.4	13.9	13.4	12.9
20.7	18.1	17.6	17.1	16.6	16.1	15.6	15.0	14.5	14.0	13.5	13.0
20.8	18.2	17.7	17.2	16.7	16.2	15.7	15.2	14.6	14.1	13.6	13.1
20.9	18.4	17.8	17.3	16.8	16.3	15.8	15.3	14.8	14.2	13.7	13.2
21.0	18.5	18.0	17.4	16.9	16.4	15.9	15.4	14.9	14.4	13.8	13.3
21.1	18.6	18.1	17.6	17.0	16.5	16.0	15.5	15.0	14.5	14.0	13.4
21.2	18.7	18.2	17.7	17.1	16.6	16.1	15.6	15.1	14.6	14.1	13.5
21.3	18.8	18.3	17.8	17.3	16.8	16.2	15.7	15.2	14.7	14.2	13.7
21.4	18.9	18.4	17.9	17.4	16.9	16.4	15.8	15.3	14.8	14.3	13.8
21.5	19.0	18.5	18.0	17.5	17.0	16.5	16.0	15.4	14.9	14.4	13.9
21.6	19.2	18.6	18.1	17.6	17.1	16.6	16.1	15.6	15.1	14.5	14.0
21.7	19.3	18.8	18.2	17.7	17.2	16.7	16.2	15.7	15.2	14.6	14.1
21.8	19.4	18.9	18.4	17.8	17.3	16.8	16.3	15.8	15.3	14.8	14.2
21.9	19.5	19.0	18.5	18.0	17.5	16.9	16.4	15.9	15.4	14.9	14.4
22.0	19.6	19.1	18.6	18.1	17.6	17.1	16.5	16.0	15.5	15.0	14.5
22.1	19.8	19.2	18.7	18.2	17.7	17.2	16.7	16.2	15.6	15.1	14.6
22.2	19.9	19.4	18.8	18.3	17.8	17.3	16.8	16.3	15.8	15.2	14.7
22.3	20.0	19.5	19.0	18.4	17.9	17.4	16.9	16.4	15.9	15.4	14.8
22.4	20.1	19.6	19.1	18.6	18.1	17.5	17.0	16.5	16.0	15.5	15.0
22.5	20.2	19.7	19.2	18.7	18.2	17.7	17.2	16.6	16.1	15.6	15.1
22.6	20.4	19.8	19.3	18.8	18.3	17.8	17.3	16.8	16.2	15.7	15.2
22.7	20.5	20.0	19.5	18.9	18.4	17.9	17.4	16.9	16.4	15.8	15.3
22.8	20.6	20.1	19.6	19.1	18.6	18.0	17.5	17.0	16.5	16.0	15.5
22.9	20.7	20.2	19.7	19.2	18.7	18.2	17.6	17.1	16.6	16.1	15.6
23.0	20.9	20.3	19.8	19.3	18.8	18.3	17.8	17.3	16.7	16.2	15.7
23.1	21.0	20.5	20.0	19.4	18.9	18.4	17.9	17.4	16.9	16.3	15.8
23.2	21.1	20.6	20.1	19.6	19.1	18.5	18.0	17.5	17.0	16.5	16.0
23.3	21.2	20.7	20.2	19.7	19.2	18.7	18.1	17.6	17.1	16.6	16.1
23.4	21.4	20.9	20.3	19.8	19.3	18.8	18.3	17.8	17.2	16.7	16.2
23.5	21.5	21.0	20.5	20.0	19.4	18.9	18.4	17.9	17.4	16.9	16.3
23.6	21.6	21.1	20.6	20.1	19.6	19.1	18.5	18.0	17.5	17.0	16.5
23.7	21.8	21.2	20.7	20.2	19.7	19.2	18.7	18.2	17.6	17.1	16.6
23.8	21.9	21.4	20.9	20.3	19.8	19.3	18.8	18.3	17.8	17.3	16.7
23.9	22.0	21.5	21.0	20.5	20.0	19.4	18.9	18.4	17.9	17.4	16.9
24.0	22.2	21.6	21.1	20.6	20.1	19.6	19.1	18.5	18.0	17.5	17.0

TABLE 1.—*The vapor pressure in millimeters for stations near the sea level*—Continued.

B=760 mm.

t–t_1	11	12	13	14	15	16	17	18	19	20
t_1 20.0	11.7	11.2	10.7	10.2	9.7	9.2	8.6	8.1	7.6	7.1
20.1	11.8	11.3	10.8	10.3	9.8	9.3	8.7	8.2	7.7	7.2
20.2	11.9	11.4	10.9	10.4	9.9	9.4	8.9	8.3	7.8	7.3
20.3	12.0	11.5	11.0	10.5	10.0	9.5	9.0	8.5	7.9	7.4
20.4	12.2	11.6	11.1	10.6	10.1	9.6	9.1	8.6	8.1	7.5
20.5	12.3	11.7	11.2	10.7	10.2	9.7	9.2	8.7	8.2	7.6
20.6	12.4	11.8	11.3	10.8	10.3	9.8	9.3	8.8	8.3	7.7
20.7	12.5	12.0	11.4	10.9	10.4	9.9	9.4	8.9	8.4	7.9
20.8	12.6	12.1	11.6	11.1	10.5	10.0	9.5	9.0	8.5	8.0
20.9	12.7	12.2	11.7	11.2	10.6	10.1	9.6	9.1	8.6	8.1
21.0	12.8	12.3	11.8	11.3	10.8	10.3	9.7	9.2	8.7	8.2
21.1	12.9	12.4	11.9	11.4	10.9	10.4	9.8	9.3	8.8	8.3
21.2	13.0	12.5	12.0	11.5	11.0	10.5	10.0	9.4	8.9	8.4
21.3	13.2	12.6	12.1	11.6	11.1	10.6	10.1	9.6	9.0	8.5
21.4	13.3	12.8	12.3	11.7	11.2	10.7	10.2	9.7	9.2	8.6
21.5	13.4	12.9	12.4	11.8	11.3	10.8	10.3	9.8	9.3	8.8
21.6	13.5	13.0	12.5	12.0	11.5	10.9	10.4	9.9	9.4	8.9
21.7	13.6	13.1	12.6	12.1	11.6	11.0	10.5	10.0	9.5	9.0
21.8	13.7	13.2	12.7	12.2	11.7	11.2	10.7	10.1	9.6	9.1
21.9	13.9	13.3	12.8	12.3	11.8	11.3	10.8	10.3	9.7	9.2
22.0	14.0	13.5	12.9	12.4	11.9	11.4	10.9	10.4	9.9	9.3
22.1	14.1	13.6	13.1	12.5	12.0	11.5	11.0	10.5	10.0	9.4
22.2	14.2	13.7	13.2	12.7	12.2	11.6	11.1	10.6	10.1	9.6
22.3	14.3	13.8	13.3	12.8	12.3	11.8	11.2	10.7	10.2	9.7
22.4	14.5	13.9	13.4	12.9	12.4	11.9	11.4	10.9	10.3	9.8
22.5	14.6	14.1	13.6	13.0	12.5	12.0	11.5	11.0	10.5	10.0
22.6	14.7	14.2	13.7	13.2	12.6	12.1	11.6	11.1	10.6	10.1
22.7	14.8	14.3	13.8	13.3	12.8	12.2	11.7	11.2	10.7	10.2
22.8	14.9	14.4	13.9	13.4	12.9	12.4	11.9	11.3	10.8	10.3
22.9	15.1	14.6	14.0	13.5	13.0	12.5	12.0	11.5	10.9	10.4
23.0	15.2	14.7	14.2	13.7	13.1	12.6	12.1	11.6	11.1	10.6
23.1	15.3	14.8	14.3	13.8	13.3	12.7	12.2	11.7	11.2	10.7
23.2	15.4	14.9	14.4	13.9	13.4	12.9	12.4	11.8	11.3	10.8
23.3	15.6	15.1	14.5	14.0	13.5	13.0	12.5	12.0	11.5	11.0
23.4	15.7	15.2	14.7	14.2	13.6	13.1	12.6	12.1	11.6	11.1
23.5	15.8	15.3	14.8	14.3	13.8	13.3	12.7	12.2	11.7	11.2
23.6	16.0	15.5	14.9	14.4	13.9	13.4	12.9	12.4	11.8	11.3
23.7	16.1	15.6	15.1	14.5	14.0	13.5	13.0	12.5	12.0	11.5
23.8	16.2	15.7	15.2	14.7	14.2	13.6	13.1	12.6	12.1	11.6
23.9	16.4	15.8	15.3	14.8	14.3	13.8	13.3	12.8	12.2	11.7
24.0	16.5	16.0	15.4	14.9	14.4	13.9	13.4	12.9	12.4	11.8

TABLE I.—*The vapor pressure in millimeters for stations near the sea level*—Continued.

B=760 mm.

$t-t_1$	0	1	2	3	4	5	6	7	8	9	10
t_1 24.0	22.2	21.6	21.1	20.6	20.1	19.6	19.1	18.5	18.0	17.5	17.0
24.1	22.3	21.8	21.3	20.7	20.2	19.7	19.2	18.7	18.2	17.7	17.1
24.2	22.4	21.9	21.4	20.9	20.4	19.8	19.3	18.8	18.3	17.8	17.3
24.3	22.6	22.0	21.5	21.0	20.5	20.0	19.5	18.9	18.4	17.9	17.4
24.4	22.7	22.2	21.7	21.1	20.6	20.1	19.6	19.1	18.6	18.0	17.5
24.5	22.8	22.3	21.8	21.3	20.8	20.3	19.7	19.2	18.7	18.2	17.7
24.6	23.0	22.4	21.9	21.4	20.9	20.4	19.9	19.4	18.8	18.3	17.8
24.7	23.1	22.6	22.1	21.6	21.1	20.5	20.0	19.5	19.0	18.5	17.9
24.8	23.2	22.7	22.2	21.7	21.2	20.7	20.1	19.6	19.1	18.6	18.1
24.9	23.4	22.9	22.3	21.8	21.3	20.8	20.3	19.8	19.3	18.7	18.2
25.0	23.5	23.0	22.5	22.0	21.5	20.9	20.4	19.9	19.4	18.9	18.4
25.1	23.7	23.1	22.6	22.1	21.6	21.1	20.6	20.0	19.5	19.0	18.5
25.2	23.8	23.3	22.8	22.3	21.7	21.2	20.7	20.2	19.7	19.2	18.6
25.3	23.9	23.4	22.9	22.4	21.9	21.4	20.8	20.3	19.8	19.3	18.8
25.4	24.1	23.6	23.0	22.5	22.0	21.5	21.0	20.5	20.0	19.4	18.9
25.5	24.2	23.7	23.2	22.7	22.2	21.7	21.1	20.6	20.1	19.6	19.1
25.6	24.4	23.9	23.3	22.8	22.3	21.8	21.3	20.8	20.2	19.7	19.2
25.7	24.5	24.0	23.5	23.0	22.5	21.9	21.4	20.9	20.4	19.9	19.4
25.8	24.7	24.1	23.6	23.1	22.6	22.1	21.6	21.0	20.5	20.0	19.5
25.9	24.8	24.3	23.8	23.3	22.7	22.2	21.7	21.2	20.7	20.2	19.6
26.0	25.0	24.4	23.9	23.4	22.9	22.4	21.9	21.3	20.8	20.3	19.8
26.1	25.1	24.6	24.1	23.6	23.0	22.5	22.0	21.5	21.0	20.5	19.9
26.2	25.3	24.7	24.2	23.7	23.2	22.7	22.2	21.6	21.1	20.6	20.1
26.3	25.4	24.9	24.4	23.8	23.3	22.8	22.3	21.8	21.3	20.7	20.2
26.4	25.6	25.0	24.5	24.0	23.5	23.0	22.4	21.9	21.4	20.9	20.4
26.5	25.7	25.2	24.7	24.2	23.6	23.1	22.6	22.1	21.6	21.1	20.5
26.6	25.9	25.3	24.8	24.3	23.8	23.3	22.8	22.2	21.7	21.2	20.7
26.7	26.0	25.5	25.0	24.5	23.9	23.4	22.9	22.4	21.9	21.4	20.8
26.8	26.2	25.6	25.1	24.6	24.1	23.6	23.1	22.5	22.0	21.5	21.0
26.9	26.3	25.8	25.3	24.8	24.3	23.7	23.2	22.7	22.2	21.7	21.1
27.0	26.5	26.0	25.4	24.9	24.4	23.9	23.4	22.9	22.3	21.8	21.3
27.1	26.6	26.1	25.6	25.1	24.6	24.0	23.5	23.0	22.5	22.0	21.4
27.2	26.8	26.3	25.7	25.2	24.7	24.2	23.7	23.2	22.6	22.1	21.6
27.3	26.9	26.4	25.9	25.4	24.9	24.4	23.8	23.3	22.8	22.3	21.8
27.4	27.1	26.6	26.1	25.5	25.0	24.5	24.0	23.5	23.0	22.4	21.9
27.5	27.3	26.7	26.2	25.7	25.2	24.7	24.2	23.6	23.1	22.6	22.1
27.6	27.4	26.9	26.4	25.9	25.4	24.8	24.3	23.8	23.3	22.8	22.2
27.7	27.6	27.1	26.5	26.0	25.5	25.0	24.5	24.0	23.4	22.9	22.4
27.8	27.7	27.2	26.7	26.2	25.7	25.2	24.6	24.1	23.6	23.1	22.6
27.9	27.9	27.4	26.9	26.3	25.8	25.3	24.8	24.3	23.8	23.2	22.7
28.0	28.1	27.6	27.0	26.5	26.0	25.5	25.0	24.4	23.9	23.4	22.9

TABLE I.—*The vapor pressure in millimeters for stations near the sea level*—Continued.

B=760 mm.

$t-t_1$	11	12	13	14	15	16	17	18	19	20
t_1 24.0	16.5	16.0	15.4	14.9	14.4	13.9	13.4	12.9	12.4	11.8
24.1	16.6	16.1	15.6	15.1	14.6	14.0	13.5	13.0	12.5	12.0
24.2	16.8	16.2	15.7	15.2	14.7	14.2	13.7	13.1	12.6	12.1
24.3	16.9	16.4	15.8	15.3	14.8	14.3	13.8	13.3	12.8	12.2
24.4	17.0	16.5	16.0	15.5	15.0	14.4	13.9	13.4	12.9	12.4
24.5	17.2	16.6	16.1	15.6	15.1	14.6	14.1	13.6	13.0	12.5
24.6	17.3	16.8	16.3	15.7	15.2	14.7	14.2	13.7	13.2	12.7
24.7	17.4	16.9	16.4	15.9	15.4	14.8	14.3	13.8	13.3	12.8
24.8	17.6	17.1	16.5	16.0	15.5	15.0	14.5	14.0	13.4	12.9
24.9	17.7	17.2	16.7	16.2	15.6	15.1	14.6	14.1	13.6	13.1
25.0	17.9	17.3	16.8	16.3	15.8	15.3	14.7	14.2	13.7	13.2
25.1	18.0	17.5	17.0	16.4	15.9	15.4	14.9	14.4	13.9	13.3
25.2	18.1	17.6	17.1	16.6	16.1	15.5	15.0	14.5	14.0	13.5
25.3	18.3	17.7	17.2	16.7	16.2	15.7	15.2	14.7	14.1	13.6
25.4	18.4	17.9	17.4	16.9	16.3	15.8	15.3	14.8	14.3	13.8
25.5	18.6	18.0	17.5	17.0	16.5	16.0	15.5	14.9	14.4	13.9
25.6	18.7	18.2	17.7	17.1	16.6	16.1	15.6	15.1	14.6	14.0
25.7	18.8	18.3	17.8	17.3	16.8	16.3	15.7	15.2	14.7	14.2
25.8	19.0	18.5	18.0	17.4	16.9	16.4	15.9	15.4	14.9	14.3
25.9	19.1	18.6	18.1	17.6	17.1	16.5	16.0	15.5	15.0	14.5
26.0	19.3	18.8	18.2	17.7	17.2	16.7	16.2	15.7	15.1	14.6
26.1	19.4	18.9	18.4	17.9	17.4	16.8	16.3	15.8	15.3	14.8
26.2	19.6	19.1	18.5	18.0	17.5	17.0	16.5	16.0	15.4	14.9
26.3	19.7	19.2	18.7	18.2	17.6	17.1	16.6	16.1	15.6	15.1
26.4	19.9	19.3	18.8	18.3	17.8	17.3	16.8	16.2	15.7	15.2
26.5	20.0	19.5	19.0	18.5	18.0	17.4	16.9	16.4	15.9	15.4
26.6	20.2	19.7	19.1	18.6	18.1	17.6	17.1	16.6	16.0	15.5
26.7	20.3	19.8	19.3	18.8	18.3	17.7	17.2	16.7	16.2	15.7
26.8	20.5	20.0	19.4	18.9	18.4	17.9	17.4	16.9	16.3	15.8
26.9	20.6	20.1	19.6	19.1	18.6	18.0	17.5	17.0	16.5	16.0
27.0	20.8	20.3	19.7	19.2	18.7	18.2	17.7	17.2	16.6	16.1
27.1	20.9	20.4	19.9	19.4	18.9	18.4	17.8	17.3	16.8	16.3
27.2	21.1	20.6	20.1	19.5	19.0	18.5	18.0	17.5	16.9	16.4
27.3	21.2	20.7	20.2	19.7	19.2	18.7	18.1	17.6	17.1	16.6
27.4	21.4	20.9	20.4	19.9	19.3	18.8	18.3	17.8	17.3	16.8
27.5	21.6	21.1	20.5	20.0	19.5	19.0	18.5	18.0	17.4	16.9
27.6	21.7	21.2	20.7	20.2	19.7	19.1	18.6	18.1	17.6	17.1
27.7	21.9	21.4	20.9	20.3	19.8	19.3	18.8	18.3	17.8	17.2
27.8	22.0	21.5	21.0	20.5	20.0	19.5	18.9	18.4	17.9	17.4
27.9	22.2	21.7	21.2	20.7	20.1	19.6	19.1	18.6	18.0	17.5
28.0	22.4	21.9	21.3	20.8	20.3	19.8	19.3	18.8	18.2	17.7

TABLE 1.—*The vapor pressure in millimeters for stations near the sea level*—Continued.

B=760 mm.

$t-t_1$	0	1	2	3	4	5	6	7	8	9	10
t_1 28.0	28.1	27.6	27.0	26.5	26.0	25.5	25.0	24.4	23.9	23.4	22.9
28.1	28.2	27.7	27.2	26.7	26.2	25.6	25.1	24.6	24.1	23.6	23.1
28.2	28.4	27.9	27.4	26.8	26.3	25.8	25.3	24.8	24.2	23.7	23.2
28.3	28.6	28.0	27.5	27.0	26.5	26.0	25.5	24.9	24.4	23.9	23.4
28.4	28.7	28.2	27.7	27.2	26.7	26.1	25.6	25.1	24.6	24.1	23.6
28.5	28.9	28.4	27.9	27.3	26.8	26.3	25.8	25.3	24.7	24.2	23.7
28.6	29.1	28.5	28.0	27.5	27.0	26.5	26.0	25.4	24.9	24.4	23.8
28.7	29.2	28.7	28.2	27.7	27.2	26.6	26.1	25.6	25.1	24.6	24.0
28.8	29.4	28.9	28.4	27.8	27.3	26.8	26.3	25.8	25.3	24.8	24.2
28.9	29.6	29.1	28.5	28.0	27.5	27.0	26.5	25.9	25.4	24.9	24.4
29.0	29.7	29.2	28.7	28.2	27.7	27.1	26.6	26.1	25.6	25.1	24.6
29.1	29.9	29.4	28.9	28.4	27.8	27.3	26.8	26.3	25.8	25.3	24.7
29.2	30.1	29.6	29.1	28.5	28.0	27.5	27.0	26.5	25.9	25.4	24.9
29.3	30.3	29.7	29.2	28.7	28.2	27.7	27.2	26.6	26.1	25.6	25.1
29.4	30.4	29.9	29.4	28.9	28.4	27.8	27.3	26.8	26.3	25.8	25.3
29.5	30.6	30.1	29.6	29.1	28.5	28.0	27.5	27.0	26.5	26.0	25.4
29.6	30.8	30.3	29.8	29.2	28.7	28.2	27.7	27.2	26.6	26.1	25.6
29.7	31.0	30.5	29.9	29.4	28.9	28.4	27.9	27.3	26.8	26.3	25.8
29.8	31.2	30.6	30.1	29.6	29.1	28.6	28.0	27.5	27.0	26.5	26.0
29.9	31.3	30.8	30.3	29.8	29.3	28.7	28.2	27.7	27.2	26.7	26.1
30.0	31.5	31.0	30.5	30.0	29.4	28.9	28.4	27.9	27.4	26.8	26.3
30.1	31.7	31.2	30.7	30.1	29.6	29.1	28.6	28.1	27.5	27.0	26.5
30.2	31.9	31.4	30.8	30.3	29.8	29.3	28.8	28.2	27.7	27.2	26.7
30.3	32.1	31.5	31.0	30.5	30.0	29.5	28.9	28.4	27.9	27.4	26.9
30.4	32.2	31.7	31.2	30.7	30.2	29.6	29.1	28.6	28.1	27.6	27.0
30.5	32.4	31.9	31.4	30.9	30.4	29.8	29.3	28.8	28.3	27.8	27.2
30.6	32.6	32.1	31.6	31.1	30.5	30.0	29.5	29.0	28.5	27.9	27.4
30.7	32.8	32.3	31.8	31.2	30.7	30.2	29.7	29.2	28.6	28.1	27.6
30.8	33.0	32.5	32.0	31.4	30.9	30.4	29.9	29.4	28.8	28.3	27.8
30.9	33.2	32.7	32.1	31.6	31.1	30.6	30.1	29.5	29.0	28.5	28.0
31.0	33.4	32.9	32.3	31.8	31.3	30.8	30.3	29.7	29.2	28.7	28.2
31.1	33.6	33.0	32.5	32.0	31.5	31.0	30.4	29.9	29.4	28.9	28.4
31.2	33.8	33.2	32.7	32.2	31.7	31.2	30.6	30.1	29.6	29.1	28.6
31.3	33.9	33.4	32.9	32.4	31.9	31.3	30.8	30.3	29.8	29.3	28.7
31.4	34.1	33.6	33.1	32.6	32.1	31.5	31.0	30.5	30.0	29.5	28.9
31.5	34.3	33.8	33.3	32.8	32.3	31.7	31.2	30.7	30.2	29.7	29.1
31.6	34.5	34.0	33.5	33.0	32.5	31.9	31.4	30.9	30.4	29.9	29.3
31.7	34.7	34.2	33.7	33.2	32.6	32.1	31.6	31.1	30.6	30.0	29.5
31.8	34.9	34.4	33.9	33.4	32.8	32.3	31.8	31.3	30.8	30.2	29.7
31.9	35.1	34.6	34.1	33.6	33.0	32.5	32.0	31.5	31.0	30.4	29.9
32.0	35.3	34.8	34.3	33.8	33.2	32.7	32.2	31.7	31.2	30.6	30.1

TABLE I.—*The vapor pressure in millimeters for stations near the sea level*—Continued.

B=760 mm.

$t-t_1$	11	12	13	14	15	16	17	18	19	20
t_1 28.0	22.4	21.9	21.3	20.8	20.3	19.8	19.3	18.8	18.2	17.7
28.1	22.5	22.0	21.5	21.0	20.5	20.0	19.4	18.9	18.4	17.9
28.2	22.7	22.2	21.7	21.1	20.6	20.1	19.6	19.1	18.6	18.0
28.3	22.9	22.3	21.8	21.3	20.8	20.3	19.8	19.2	18.7	18.2
28.4	23.0	22.5	22.0	21.5	21.0	20.4	19.9	19.4	18.9	18.4
28.5	23.2	22.7	22.2	21.6	21.1	20.6	20.1	19.6	19.0	18.5
28.6	23.4	22.8	22.3	21.8	21.3	20.8	20.3	19.7	19.2	18.7
28.7	23.5	23.0	22.5	22.0	21.5	21.0	20.4	19.9	19.4	18.9
28.8	23.7	23.2	22.7	22.1	21.6	21.1	20.6	20.1	19.6	19.0
28.9	23.9	23.4	22.8	22.3	21.8	21.3	20.8	20.2	19.7	19.2
29.0	24.0	23.5	23.0	22.5	22.0	21.4	20.9	20.4	19.9	19.4
29.1	24.2	23.7	23.2	22.7	22.2	21.6	21.1	20.6	20.1	19.6
29.2	24.4	23.9	23.4	22.8	22.3	21.8	21.3	20.8	20.2	19.7
29.3	24.6	24.0	23.5	23.0	22.5	22.0	21.4	20.9	20.4	19.9
29.4	24.7	24.2	23.7	23.2	22.7	22.2	21.6	21.1	20.6	20.1
29.5	24.9	24.4	23.9	23.4	22.8	22.3	21.8	21.3	20.8	20.2
29.6	25.1	24.6	24.1	23.5	23.0	22.5	22.0	21.5	20.9	20.4
29.7	25.3	24.7	24.2	23.7	23.2	22.7	22.2	21.6	21.1	20.6
29.8	25.4	24.9	24.4	23.9	23.4	22.8	22.3	21.8	21.3	20.8
29.9	25.6	25.1	24.6	24.1	23.5	23.0	22.5	22.0	21.5	21.0
30.0	25.8	25.3	24.8	24.2	23.7	23.2	22.7	22.2	21.7	21.1
30.1	26.0	25.5	24.9	24.4	23.9	23.4	22.9	22.3	21.8	21.3
30.2	26.2	25.6	25.1	24.6	24.1	23.6	23.0	22.5	22.0	21.5
30.3	26.4	25.8	25.3	24.8	24.3	23.8	23.2	22.7	22.2	21.7
30.4	26.5	26.0	25.5	25.0	24.5	23.9	23.4	22.9	22.4	21.9
30.5	26.7	26.2	25.7	25.2	24.6	24.1	23.6	23.1	22.6	22.0
30.6	26.9	26.4	25.9	25.3	24.8	24.3	23.8	23.3	22.7	22.2
30.7	27.1	26.6	26.1	25.5	25.0	24.5	24.0	23.5	22.9	22.4
30.8	27.3	26.8	26.2	25.7	25.2	24.7	24.2	23.6	23.1	22.6
30.9	27.5	26.9	26.4	25.9	25.4	24.9	24.4	23.8	23.3	22.8
31.0	27.7	27.1	26.6	26.1	25.6	25.1	24.5	24.0	23.5	23.0
31.1	27.8	27.3	26.8	26.3	25.8	25.2	24.7	24.2	23.7	23.2
31.2	28.0	27.5	27.0	26.5	26.0	25.4	24.9	24.4	23.9	23.4
31.3	28.2	27.7	27.2	26.7	26.1	25.6	25.1	24.6	24.1	23.5
31.4	28.4	27.9	27.4	26.9	26.3	25.8	25.3	24.8	24.3	23.7
31.5	28.6	28.1	27.6	27.1	26.5	26.0	25.5	25.0	24.5	23.9
31.6	28.8	28.3	27.8	27.3	26.7	26.2	25.7	25.2	24.7	24.1
31.7	29.0	28.5	28.0	27.4	26.9	26.4	25.9	25.4	24.9	24.3
31.8	29.2	28.7	28.2	27.6	27.1	26.6	26.1	25.6	25.1	24.5
31.9	29.4	28.9	28.4	27.8	27.3	26.8	26.3	25.8	25.2	24.7
32.0	29.6	29.1	28.6	28.0	27.5	27.0	26.5	26.0	25.4	24.9

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TABLE I.—*The vapor pressure in millimeters for stations near the sea level*—Continued.

B=760 mm.

$t-t_1$	0	1	2	3	4	5	6	7	8	9	10
t_1 32.0	35.3	34.8	34.3	33.8	33.2	32.7	32.2	31.7	31.2	30.6	30.1
32.1	35.5	35.0	34.5	34.0	33.4	32.9	32.4	31.9	31.4	30.8	30.3
32.2	35.7	35.2	34.7	34.2	33.6	33.1	32.6	32.1	31.6	31.0	30.5
32.3	35.9	35.4	34.9	34.4	33.8	33.3	32.8	32.3	31.8	31.2	30.7
32.4	36.1	35.6	35.1	34.6	34.0	33.5	33.0	32.5	32.0	31.4	30.9
32.5	36.3	35.8	35.3	34.8	34.2	33.7	33.2	32.7	32.2	31.6	31.1
32.6	36.5	36.0	35.5	35.0	34.5	33.9	33.4	32.9	32.4	31.9	31.3
32.7	36.7	36.2	35.7	35.2	34.7	34.1	33.6	33.1	32.6	32.1	31.5
32.8	37.0	36.4	35.9	35.4	34.9	34.3	33.8	33.3	32.8	32.3	31.7
32.9	37.2	36.6	36.1	35.6	35.1	34.6	34.0	33.5	33.0	32.5	32.0
33.0	37.4	36.9	36.3	35.8	35.3	34.8	34.2	33.7	33.2	32.7	32.2
33.1	37.6	37.1	36.5	36.0	35.5	35.0	34.5	33.9	33.4	32.9	32.4
33.2	37.8	37.3	36.7	36.2	35.7	35.2	34.7	34.1	33.6	33.1	32.6
33.3	38.0	37.5	37.0	36.4	35.9	35.4	34.9	34.4	33.8	33.3	32.8
33.4	38.2	37.7	37.2	36.7	36.1	35.6	35.1	34.6	34.1	33.5	33.0
33.5	38.4	37.9	37.4	36.9	36.3	35.8	35.3	34.8	34.3	33.7	33.2
33.6	38.7	38.1	37.6	37.1	36.6	36.0	35.5	35.0	34.5	34.0	33.4
33.7	38.9	38.3	37.8	37.3	36.8	36.3	35.7	35.2	34.7	34.2	33.7
33.8	39.1	38.6	38.0	37.5	37.0	36.5	36.0	35.4	34.9	34.4	33.9
33.9	39.3	38.8	38.3	37.7	37.2	36.7	36.2	35.7	35.1	34.6	34.1
34.0	39.5	39.0	38.5	38.0	37.4	36.9	36.4	35.9	35.4	34.8	34.3
34.1	39.7	39.2	38.7	38.2	37.7	37.1	36.6	36.1	35.6	35.0	34.5
34.2	40.0	39.4	38.9	38.4	37.9	37.4	36.8	36.3	35.8	35.3	34.8
34.3	40.2	39.7	39.1	38.6	38.1	37.6	37.1	36.5	36.0	35.5	35.0
34.4	40.4	39.9	39.4	38.8	38.3	37.8	37.3	36.8	36.2	35.7	35.2
34.5	40.6	40.1	39.6	39.1	38.6	38.0	37.5	37.0	36.5	36.0	35.4
34.6	40.9	40.3	39.8	39.3	38.8	38.3	37.7	37.2	36.7	36.2	35.7
34.7	41.1	40.6	40.0	39.5	39.0	38.5	38.0	37.4	36.9	36.4	35.9
34.8	41.3	40.8	40.3	39.8	39.2	38.7	38.2	37.7	37.2	36.6	36.1
34.9	41.6	41.0	40.5	40.0	39.5	38.9	38.4	37.9	37.4	36.9	36.3
35.0	41.8	41.3	40.7	40.2	39.7	39.2	38.6	38.1	37.6	37.1	36.6
35.1	42.0	41.5	41.0	40.5	39.9	39.4	38.9	38.4	37.8	37.3	36.8
35.2	42.3	41.7	41.2	40.7	40.2	39.6	39.1	38.6	38.1	37.6	37.0
35.3	42.5	42.0	41.4	40.9	40.4	39.9	39.3	38.8	38.3	37.8	37.3
35.4	42.7	42.2	41.7	41.2	40.6	40.1	39.6	39.1	38.5	38.0	37.5
35.5	43.0	42.4	41.9	41.4	40.9	40.4	39.8	39.3	38.8	38.3	37.7
35.6	43.2	42.7	42.1	41.6	41.1	40.6	40.1	39.5	39.0	38.5	38.0
35.7	43.4	42.9	42.4	41.9	41.3	40.8	40.3	39.8	39.3	38.7	38.2
35.8	43.7	43.1	42.6	42.1	41.6	41.0	40.5	40.0	39.5	39.0	38.5
35.9	43.9	43.4	42.9	42.4	41.8	41.3	40.8	40.3	39.7	39.2	38.7
36.0	44.2	43.6	43.1	42.6	42.1	41.5	41.0	40.5	40.0	39.5	38.9

TABLE I.—*The vapor pressure in millimeters for stations near the sea level*—Continued.

B=760 mm.

$t-t_1$	11	12	13	14	15	16	17	18	19	20
t_1 32.0	29.6	29.1	28.6	28.0	27.5	27.0	26.5	26.0	25.4	24.9
32.1	29.8	29.3	28.8	28.2	27.7	27.2	26.7	26.2	25.6	25.1
32.2	30.0	29.5	29.0	28.4	27.9	27.4	26.9	26.4	25.8	25.3
32.3	30.2	29.7	29.2	28.6	28.1	27.6	27.1	26.6	26.0	25.5
32.4	30.4	29.9	29.4	28.8	28.3	27.8	27.3	26.8	26.2	25.7
32.5	30.6	30.1	29.6	29.0	28.5	28.0	27.5	27.0	26.4	25.9
32.6	30.8	30.3	29.8	29.3	28.7	28.2	27.7	27.2	26.7	26.1
32.7	31.0	30.5	30.0	29.5	28.9	28.4	27.9	27.4	26.9	26.3
32.8	31.2	30.7	30.2	29.7	29.1	28.6	28.1	27.6	27.1	26.5
32.9	31.4	30.9	30.4	29.9	29.4	28.8	28.3	27.8	27.3	26.7
33.0	31.6	31.1	30.6	30.1	29.6	29.0	28.5	28.0	27.5	27.0
33.1	31.9	31.3	30.8	30.3	29.8	29.3	28.7	28.2	27.7	27.2
33.2	32.1	31.5	31.0	30.5	30.0	29.5	28.9	28.4	27.9	27.4
33.3	32.3	31.8	31.2	30.7	30.2	29.7	29.1	28.6	28.1	27.6
33.4	32.5	32.0	31.4	30.9	30.4	29.9	29.4	28.8	28.3	27.8
33.5	32.7	32.2	31.7	31.1	30.6	30.1	29.6	29.1	28.5	28.0
33.6	32.9	32.4	31.9	31.4	30.8	30.3	29.8	29.3	28.8	28.2
33.7	33.1	32.6	32.1	31.6	31.1	30.5	30.0	29.5	29.0	28.5
33.8	33.3	32.8	32.3	31.8	31.3	30.7	30.2	29.7	29.2	28.7
33.9	33.6	33.0	32.5	32.0	31.5	31.0	30.4	29.9	29.4	28.9
34.0	33.8	33.3	32.7	32.2	31.7	31.2	30.7	30.1	29.6	29.1
34.1	34.0	33.5	33.0	32.4	31.9	31.4	30.9	30.4	29.8	29.3
34.2	34.2	33.7	33.2	32.7	32.2	31.6	31.1	30.6	30.1	29.5
34.3	34.5	33.9	33.4	32.9	32.4	31.9	31.3	30.8	30.3	29.8
34.4	34.7	34.1	33.6	33.1	32.6	32.1	31.5	31.0	30.5	30.0
34.5	34.9	34.4	33.9	33.3	32.8	32.3	31.8	31.3	30.7	30.2
34.6	35.1	34.6	34.1	33.6	33.1	32.5	32.0	31.5	31.0	30.4
34.7	35.4	34.8	34.3	33.8	33.3	32.7	32.2	31.7	31.2	30.7
34.8	35.6	35.1	34.5	34.0	33.5	33.0	32.5	31.9	31.4	30.9
34.9	35.8	35.3	34.8	34.2	33.7	33.2	32.7	32.2	31.6	31.1
35.0	36.0	35.5	35.0	34.5	34.0	33.4	32.9	32.4	31.9	31.3
35.1	36.3	35.8	35.2	34.7	34.2	33.7	33.2	32.6	32.1	31.6
35.2	36.5	36.0	35.5	34.9	34.4	33.9	33.4	32.9	32.3	31.8
35.3	36.7	36.2	35.7	35.2	34.7	34.1	33.6	33.1	32.6	32.0
35.4	37.0	36.5	35.9	35.4	34.9	34.4	33.9	33.3	32.8	32.3
35.5	37.2	36.7	36.2	35.7	35.1	34.6	34.1	33.6	33.0	32.5
35.6	37.5	36.9	36.4	35.9	35.4	34.8	34.3	33.8	33.3	32.8
35.7	37.7	37.2	36.6	36.1	35.6	35.1	34.6	34.0	33.5	33.0
35.8	37.9	37.4	36.9	36.4	35.8	35.3	34.8	34.3	33.8	33.2
35.9	38.2	37.7	37.1	36.6	36.1	35.6	35.0	34.5	34.0	33.5
36.0	38.4	37.9	37.4	36.8	36.3	35.8	35.3	34.8	34.2	33.7

TABLE 1.—*The vapor pressure in millimeters for stations near the sea level*—Continued.

B=760 mm.

$t-t_1$	0	1	2	3	4	5	6	7	8	9	10
t_1 36.0	44.2	43.6	43.1	42.6	42.1	41.5	41.0	40.5	40.0	39.5	38.9
36.1	44.4	43.9	43.4	42.8	42.3	41.8	41.3	40.7	40.2	39.7	39.2
36.2	44.7	44.1	43.6	43.1	42.6	42.0	41.5	41.0	40.5	39.9	39.4
36.3	44.9	44.4	43.8	43.3	42.8	42.3	41.8	41.2	40.7	40.2	39.7
36.4	45.1	44.6	44.1	43.6	43.1	42.5	42.0	41.5	41.0	40.4	39.9
36.5	45.4	44.9	44.3	43.8	43.3	42.8	42.3	41.7	41.2	40.7	40.2
36.6	45.6	45.1	44.6	44.1	43.6	43.0	42.5	42.0	41.5	40.9	40.4
36.7	45.9	45.4	44.8	44.3	43.8	43.3	42.8	42.2	41.7	41.2	40.7
36.8	46.1	45.6	45.1	44.6	44.1	43.5	43.0	42.5	42.0	41.4	40.9
36.9	46.4	45.9	45.3	44.8	44.3	43.8	43.3	42.7	42.2	41.7	41.2
37.0	46.7	46.1	45.6	45.1	44.6	44.0	43.5	43.0	42.5	41.9	41.4
37.1	46.9	46.4	45.9	45.3	44.8	44.3	43.8	43.2	42.7	42.2	41.7
37.2	47.2	46.6	46.1	45.6	45.1	44.5	44.0	43.5	43.0	42.5	41.9
37.3	47.4	46.9	46.4	45.9	45.3	44.8	44.3	43.8	43.2	42.7	42.2
37.4	47.7	47.2	46.6	46.1	45.6	45.1	44.5	44.0	43.5	43.0	42.4
37.5	47.9	47.4	46.9	46.4	45.8	45.3	44.8	44.3	43.8	43.2	42.7
37.6	48.2	47.7	47.2	46.6	46.1	45.6	45.1	44.5	44.0	43.5	43.0
37.7	48.5	47.9	47.4	46.9	46.4	45.8	45.3	44.8	44.3	43.8	43.2
37.8	48.7	48.2	47.7	47.2	46.6	46.1	45.6	45.1	44.5	44.0	43.5
37.9	49.0	48.5	47.9	47.4	46.9	46.4	45.8	45.3	44.8	44.3	43.8
38.0	49.3	48.7	48.2	47.7	47.2	46.6	46.1	45.6	45.1	44.6	44.0
38.1	49.5	49.0	48.5	48.0	47.4	46.9	46.4	45.9	45.3	44.8	44.3
38.2	49.8	49.3	48.8	48.2	47.7	47.2	46.7	46.1	45.6	45.1	44.6
38.3	50.1	49.5	49.0	48.5	48.0	47.5	46.9	46.4	45.9	45.4	44.8
38.4	50.3	49.8	49.3	48.8	48.2	47.7	47.2	46.7	46.2	45.6	45.1
38.5	50.6	50.1	49.6	49.0	48.5	48.0	47.5	46.9	46.4	45.9	45.4
38.6	50.9	50.4	49.8	49.3	48.8	48.3	47.7	47.2	46.7	46.2	45.7
38.7	51.2	50.6	50.1	49.6	49.1	48.5	48.0	47.5	47.0	46.4	45.9
38.8	51.4	50.9	50.4	49.9	49.3	48.8	48.3	47.8	47.2	46.7	46.2
38.9	51.7	51.2	50.7	50.1	49.6	49.1	48.6	48.1	47.5	47.0	46.5
39.0	52.0	51.5	51.0	50.4	49.9	49.4	48.9	48.3	47.8	47.3	46.8
39.1	52.3	51.8	51.2	50.7	50.2	49.7	49.1	48.6	48.1	47.6	47.0
39.2	52.6	52.0	51.5	51.0	50.5	49.9	49.4	48.9	48.4	47.8	47.3
39.3	52.8	52.3	51.8	51.3	50.7	50.2	49.7	49.2	48.6	48.1	47.6
39.4	53.1	52.6	52.1	51.6	51.0	50.5	50.0	49.5	48.9	48.4	47.9
39.5	53.4	52.9	52.4	51.8	51.3	50.8	50.3	49.7	49.2	48.7	48.2
39.6	53.7	53.2	52.7	52.1	51.6	51.1	50.6	50.0	49.5	49.0	48.4
39.7	54.0	53.5	52.9	52.4	51.9	51.4	50.8	50.3	49.8	49.3	48.7
39.8	54.3	53.8	53.2	52.7	52.2	51.7	51.1	50.6	50.1	49.6	49.0
39.9	54.6	54.0	53.5	53.0	52.5	51.9	51.4	50.9	50.4	49.8	49.3
40.0	54.9	54.3	53.8	53.3	52.8	52.2	51.7	51.2	50.7	50.1	49.6

TABLE 1.—*The vapor pressure in millimeters for stations near the sea level*—Continued.

B=760 mm.

$t-t_1$	11	12	13	14	15	16	17	18	19	20
t_1 36.0	38.4	37.9	37.4	36.8	36.3	35.8	35.3	34.8	34.2	33.7
36.1	38.7	38.1	37.6	37.1	36.6	36.0	35.5	35.0	34.5	34.0
36.2	38.9	38.4	37.9	37.3	36.8	36.3	35.8	35.2	34.7	34.2
36.3	39.1	38.6	38.1	37.6	37.1	36.5	36.0	35.5	35.0	34.4
36.4	39.4	38.9	38.4	37.8	37.3	36.8	36.3	35.7	35.2	34.7
36.5	39.6	39.1	38.6	38.1	37.6	37.0	36.5	36.0	35.5	34.9
36.6	39.9	39.4	38.9	38.3	37.8	37.3	36.8	36.2	35.7	35.2
36.7	40.1	39.6	39.1	38.6	38.1	37.5	37.0	36.5	35.9	35.4
36.8	40.4	39.9	39.3	38.8	38.3	37.8	37.3	36.7	36.2	35.7
36.9	40.6	40.1	39.6	39.1	38.5	38.0	37.5	37.0	36.5	35.9
37.0	40.9	40.4	39.9	39.3	38.8	38.3	37.8	37.2	36.7	36.2
37.1	41.1	40.6	40.1	39.6	39.1	38.5	38.0	37.5	37.0	36.4
37.2	41.4	40.9	40.4	39.8	39.3	38.8	38.3	37.7	37.2	36.7
37.3	41.7	41.1	40.6	40.1	39.6	39.1	38.5	38.0	37.5	37.0
37.4	41.9	41.4	40.9	40.4	39.8	39.3	38.8	38.3	37.7	37.2
37.5	42.2	41.7	41.1	40.6	40.1	39.6	39.1	38.5	38.0	37.5
37.6	42.4	41.9	41.4	40.9	40.4	39.8	39.3	38.8	38.3	37.7
37.7	42.7	42.2	41.7	41.1	40.6	40.1	39.6	39.0	38.5	38.0
37.8	43.0	42.5	41.9	41.4	40.9	40.4	39.8	39.3	38.8	38.3
37.9	43.2	42.7	42.2	41.7	41.1	40.6	40.1	39.6	39.0	38.5
38.0	43.5	43.0	42.5	41.9	41.4	40.9	40.4	39.8	39.3	38.8
38.1	43.8	43.2	42.7	42.2	41.7	41.2	40.6	40.1	39.6	39.1
38.2	44.0	43.5	43.0	42.5	41.9	41.4	40.9	40.4	39.9	39.3
38.3	44.3	43.8	43.3	42.7	42.2	41.7	41.2	40.6	40.1	39.6
38.4	44.6	44.1	43.5	43.0	42.5	42.0	41.4	40.9	40.4	39.9
38.5	44.9	44.3	43.8	43.3	42.8	42.2	41.7	41.2	40.7	40.1
38.6	45.1	44.6	44.1	43.6	43.0	42.5	42.0	41.5	40.9	40.4
38.7	45.4	44.9	44.4	43.8	43.3	42.8	42.3	41.7	41.2	40.7
38.8	45.7	45.2	44.6	44.1	43.6	43.1	42.5	42.0	41.5	41.0
38.9	46.0	45.4	44.9	44.4	43.9	43.4	42.8	42.3	41.8	41.2
39.0	46.2	45.7	45.2	44.7	44.1	43.6	43.1	42.6	42.0	41.5
39.1	46.5	46.0	45.5	44.9	44.4	43.9	43.4	42.8	42.3	41.8
39.2	46.8	46.3	45.7	45.2	44.7	44.2	43.7	43.1	42.6	42.1
39.3	47.1	46.5	46.0	45.5	45.0	44.5	43.9	43.4	42.9	42.4
39.4	47.4	46.8	46.3	45.8	45.3	44.7	44.2	43.7	43.2	42.6
39.5	47.6	47.1	46.6	46.1	45.5	45.0	44.5	44.0	43.5	42.9
39.6	47.9	47.4	46.9	46.4	45.8	45.3	44.8	44.3	43.7	43.2
39.7	48.2	47.7	47.2	46.6	46.1	45.6	45.1	44.5	44.0	43.5
39.8	48.5	48.0	47.5	46.9	46.4	45.9	45.4	44.8	44.3	43.8
39.9	48.8	48.3	47.8	47.2	46.7	46.2	45.7	45.1	44.6	44.1
40.0	49.1	48.6	48.1	47.5	47.0	46.5	46.0	45.4	44.9	44.4

TABLE 2.—*The vapor pressure in millimeters for stations on the Rocky Mountain plateau.*

B=645 mm.

$t-t_1$	0	1	2	3	4	5	6	7	8	9	10
t_1 0.0	4.6	4.1	3.7	3.3	2.9	2.4	2.0	1.6	1.2	0.7	0.3
0.2	4.6	4.2	3.8	3.4	2.9	2.5	2.1	1.7	1.2	0.8	0.4
0.4	4.7	4.3	3.8	3.4	3.0	2.6	2.1	1.7	1.3	0.9	0.4
0.6	4.8	4.3	3.9	3.5	3.1	2.6	2.2	1.8	1.4	0.9	0.5
0.8	4.8	4.4	4.0	3.6	3.1	2.7	2.3	1.9	1.4	1.0	0.6
1.0	4.9	4.5	4.1	3.6	3.2	2.8	2.4	1.9	1.5	1.1	0.6
1.2	5.0	4.6	4.1	3.7	3.3	2.8	2.4	2.0	1.6	1.1	0.7
1.4	5.0	4.6	4.2	3.8	3.3	2.9	2.5	2.1	1.6	1.2	0.8
1.6	5.1	4.7	4.3	3.8	3.4	3.0	2.6	2.1	1.7	1.3	0.9
1.8	5.2	4.8	4.3	3.9	3.5	3.1	2.6	2.2	1.8	1.4	0.9
2.0	5.3	4.8	4.4	4.0	3.6	3.1	2.7	2.3	1.9	1.4	1.0
2.2	5.4	4.9	4.5	4.1	3.6	3.2	2.8	2.4	1.9	1.5	1.1
2.4	5.4	5.0	4.6	4.1	3.7	3.3	2.9	2.4	2.0	1.6	1.2
2.6	5.5	5.1	4.6	4.2	3.8	3.4	2.9	2.5	2.1	1.7	1.2
2.8	5.6	5.2	4.7	4.3	3.9	3.4	3.0	2.6	2.2	1.7	1.3
3.0	5.7	5.2	4.8	4.4	4.0	3.5	3.1	2.7	2.2	1.8	1.4
3.2	5.7	5.3	4.9	4.5	4.0	3.6	3.2	2.8	2.3	1.9	1.5
3.4	5.8	5.4	5.0	4.5	4.1	3.7	3.3	2.8	2.4	2.0	1.5
3.6	5.9	5.5	5.0	4.6	4.2	3.8	3.3	2.9	2.5	2.1	1.6
3.8	6.0	5.6	5.1	4.7	4.3	3.9	3.4	3.0	2.6	2.1	1.7
4.0	6.1	5.6	5.2	4.8	4.4	3.9	3.5	3.1	2.6	2.2	1.8
4.2	6.2	5.7	5.3	4.9	4.4	4.0	3.6	3.2	2.7	2.3	1.9
4.4	6.2	5.8	5.4	5.0	4.5	4.1	3.7	3.2	2.8	2.4	2.0
4.6	6.3	5.9	5.5	5.0	4.6	4.2	3.8	3.3	2.9	2.5	2.0
4.8	6.4	6.0	5.6	5.1	4.7	4.3	3.9	3.4	3.0	2.6	2.1
5.0	6.5	6.1	5.7	5.2	4.8	4.4	3.9	3.5	3.1	2.7	2.2
5.2	6.6	6.2	5.7	5.3	4.9	4.5	4.0	3.6	3.2	2.7	2.3
5.4	6.7	6.3	5.8	5.4	5.0	4.5	4.1	3.7	3.3	2.8	2.4
5.6	6.8	6.4	5.9	5.5	5.1	4.6	4.2	3.8	3.4	2.9	2.5
5.8	6.9	6.5	6.0	5.6	5.2	4.7	4.3	3.9	3.5	3.0	2.6
6.0	7.0	6.5	6.1	5.7	5.3	4.8	4.4	4.0	3.5	3.1	2.7
6.2	7.1	6.6	6.2	5.8	5.4	4.9	4.5	4.1	3.6	3.2	2.8
6.4	7.2	6.7	6.3	5.9	5.5	5.0	4.6	4.2	3.7	3.3	2.9
6.6	7.3	6.8	6.4	6.0	5.5	5.1	4.7	4.3	3.8	3.4	3.0
6.8	7.4	6.9	6.5	6.1	5.6	5.2	4.8	4.4	3.9	3.5	3.1
7.0	7.5	7.0	6.6	6.2	5.8	5.3	4.9	4.5	4.0	3.6	3.2
7.2	7.6	7.1	6.7	6.3	5.9	5.4	5.0	4.6	4.1	3.7	3.3
7.4	7.7	7.2	6.8	6.4	6.0	5.5	5.1	4.7	4.2	3.8	3.4
7.6	7.8	7.4	6.9	6.5	6.1	5.6	5.2	4.8	4.3	3.9	3.5
7.8	7.9	7.5	7.0	6.6	6.2	5.7	5.3	4.9	4.4	4.0	3.6
8.0	8.0	7.6	7.1	6.7	6.3	5.8	5.4	5.0	4.6	4.1	3.7

TABLE 2.—*The vapor pressure in millimeters for stations on the Rocky Mountain plateau.*

B=645 mm.

$t-t_1$	11	12	13	14	15	16	17	18	19	20
t_1 0.0										
0.2										
0.4										
0.6	0.1									
0.8	0.2									
1.0	0.2									
1.2	0.3									
1.4	0.4									
1.6	0.4									
1.8	0.5	0.1								
2.0	0.6	0.1								
2.2	0.7	0.2								
2.4	0.7	0.3								
2.6	0.8	0.4								
2.8	0.9	0.5								
3.0	1.0	0.5	0.1							
3.2	1.0	0.6	0.2							
3.4	1.1	0.7	0.3							
3.6	1.2	0.8	0.3							
3.8	1.3	0.9	0.4							
4.0	1.4	0.9	0.5	0.1						
4.2	1.4	1.0	0.6	0.2						
4.4	1.5	1.1	0.7	0.3						
4.6	1.6	1.2	0.8	0.3						
4.8	1.7	1.3	0.9	0.4						
5.0	1.8	1.4	0.9	0.5	0.1					
5.2	1.9	1.5	1.0	0.6	0.2					
5.4	2.0	1.6	1.1	0.7	0.3					
5.6	2.1	1.6	1.2	0.8	0.4					
5.8	2.2	1.7	1.3	0.9	0.5					
6.0	2.3	1.8	1.4	1.0	0.5	0.1				
6.2	2.4	1.9	1.5	1.1	0.6	0.2				
6.4	2.5	2.0	1.6	1.2	0.7	0.3				
6.6	2.5	2.1	1.7	1.3	0.8	0.4				
6.8	2.6	2.2	1.8	1.4	0.9	0.5	0.1			
7.0	2.7	2.3	1.9	1.5	1.0	0.6	0.2			
7.2	2.8	2.4	2.0	1.6	1.1	0.7	0.3			
7.4	2.9	2.5	2.1	1.7	1.2	0.8	0.4			
7.6	3.1	2.6	2.2	1.8	1.3	0.9	0.5	0.1		
7.8	3.2	2.7	2.3	1.9	1.4	1.0	0.6	0.2		
8.0	3.3	2.8	2.4	2.0	1.5	1.1	0.7	0.3		

TABLE 2.—*The vapor pressure in millimeters for stations on the Rocky Mountain plateau*—Continued.

B=645 mm.

$t-t_1$	0	1	2	3	4	5	6	7	8	9	10
t_1 8.0	8.0	7.6	7.1	6.7	6.3	5.8	5.4	5.0	4.6	4.1	3.7
8.2	8.1	7.7	7.2	6.8	6.4	6.0	5.5	5.1	4.7	4.2	3.8
8.4	8.2	7.8	7.4	6.9	6.5	6.1	5.6	5.2	4.8	4.3	3.9
8.6	8.3	7.9	7.5	7.0	6.6	6.2	5.7	5.3	4.9	4.5	4.0
8.8	8.4	8.0	7.6	7.1	6.7	6.3	5.9	5.4	5.0	4.6	4.1
9.0	8.6	8.1	7.7	7.2	6.8	6.4	6.0	5.5	5.1	4.7	4.2
9.2	8.7	8.2	7.8	7.4	6.9	6.5	6.1	5.7	5.2	4.8	4.4
9.4	8.8	8.3	7.9	7.5	7.1	6.6	6.2	5.8	5.3	4.9	4.5
9.6	8.9	8.5	8.0	7.6	7.2	6.7	6.3	5.9	5.4	5.0	4.6
9.8	9.0	8.6	8.2	7.7	7.3	6.9	6.4	6.0	5.6	5.1	4.7
10.0	9.1	8.7	8.3	7.8	7.4	7.0	6.6	6.1	5.7	5.3	4.8
10.2	9.3	8.8	8.4	8.0	7.5	7.1	6.7	6.2	5.8	5.4	5.0
10.4	9.4	9.0	8.5	8.1	7.7	7.2	6.8	6.4	5.9	5.5	5.1
10.6	9.5	9.1	8.6	8.2	7.8	7.4	6.9	6.5	6.1	5.6	5.2
10.8	9.6	9.2	8.8	8.3	7.9	7.5	7.1	6.6	6.2	5.8	5.3
11.0	9.8	9.3	8.9	8.5	8.0	7.6	7.2	6.8	6.3	5.9	5.4
11.2	9.9	9.4	9.0	8.6	8.2	7.7	7.3	6.9	6.5	6.0	5.6
11.4	10.0	9.6	9.2	8.7	8.3	7.9	7.4	7.0	6.6	6.1	5.7
11.6	10.2	9.7	9.3	8.9	8.4	8.0	7.6	7.1	6.7	6.3	5.8
11.8	10.3	9.9	9.4	9.0	8.6	8.1	7.7	7.3	6.8	6.4	6.0
12.0	10.4	10.0	9.6	9.1	8.7	8.3	7.8	7.4	7.0	6.5	6.1
12.2	10.6	10.1	9.7	9.3	8.8	8.4	8.0	7.5	7.1	6.7	6.3
12.4	10.7	10.3	9.8	9.4	9.0	8.6	8.1	7.7	7.3	6.8	6.4
12.6	10.9	10.4	10.0	9.6	9.1	8.7	8.3	7.8	7.4	7.0	6.5
12.8	11.0	10.6	10.1	9.7	9.3	8.8	8.4	8.0	7.5	7.1	6.7
13.0	11.1	10.7	10.3	9.8	9.4	9.0	8.6	8.1	7.7	7.3	6.8
13.2	11.3	10.8	10.4	10.0	9.6	9.1	8.7	8.3	7.8	7.4	6.9
13.4	11.4	11.0	10.6	10.1	9.7	9.3	8.8	8.4	8.0	7.5	7.1
13.6	11.6	11.1	10.7	10.3	9.9	9.4	9.0	8.6	8.1	7.7	7.3
13.8	11.7	11.3	10.9	10.4	10.0	9.6	9.1	8.7	8.3	7.8	7.4
14.0	11.9	11.4	11.0	10.5	10.1	9.7	9.3	8.9	8.4	8.0	7.6
14.2	12.0	11.6	11.2	10.7	10.3	9.8	9.4	9.0	8.6	8.1	7.7
14.4	12.2	11.8	11.3	10.9	10.5	10.0	9.6	9.2	8.7	8.3	7.8
14.6	12.4	11.9	11.5	11.1	10.6	10.2	9.8	9.3	8.9	8.4	8.0
14.8	12.5	12.1	11.6	11.2	10.8	10.3	9.9	9.5	9.0	8.6	8.2
15.0	12.7	12.2	11.8	11.4	10.9	10.5	10.1	9.6	9.2	8.8	8.3
15.2	12.8	12.4	12.0	11.5	11.1	10.7	10.2	9.8	9.4	8.9	8.5
15.4	13.0	12.6	12.1	11.7	11.3	10.8	10.4	10.0	9.6	9.1	8.7
15.6	13.2	12.7	12.3	11.9	11.4	11.0	10.6	10.1	9.7	9.3	8.8
15.8	13.3	12.9	12.5	12.0	11.6	11.2	10.7	10.3	9.9	9.4	9.0
16.0	13.5	13.1	12.6	12.2	11.8	11.3	10.9	10.5	10.0	9.6	9.2

TABLE 2.—*The vapor pressure in millimeters for stations on the Rocky Mountain plateau*—Continued.

B=645 mm.

$t-t_1$	11	12	13	14	15	16	17	18	19	20
t_1 8.0	3.3	2.8	2.4	2.0	1.5	1.1	0.7	0.3		
8.2	3.4	2.9	2.5	2.1	1.6	1.2	0.8	0.4		
8.4	3.5	3.1	2.6	2.2	1.8	1.3	0.9	0.5		
8.6	3.6	3.2	2.7	2.3	1.9	1.4	1.0	0.6	0.2	
8.8	3.7	3.3	2.8	2.4	2.0	1.6	1.1	0.7	0.3	
9.0	3.8	3.4	3.0	2.5	2.1	1.7	1.2	0.8	0.4	
9.2	3.9	3.5	3.1	2.6	2.2	1.8	1.3	0.9	0.5	
9.4	4.0	3.6	3.2	2.8	2.3	1.9	1.5	1.0	0.6	0.2
9.6	4.2	3.7	3.3	2.9	2.4	2.0	1.6	1.2	0.7	0.3
9.8	4.3	3.9	3.4	3.0	2.6	2.1	1.7	1.3	0.8	0.4
10.0	4.4	4.0	3.5	3.1	2.7	2.3	1.8	1.4	1.0	0.5
10.2	4.5	4.1	3.7	3.2	2.8	2.4	1.9	1.5	1.1	0.6
10.4	4.6	4.2	3.8	3.4	2.9	2.5	2.1	1.6	1.2	0.8
10.6	4.8	4.3	3.9	3.5	3.0	2.6	2.2	1.8	1.3	0.9
10.8	4.9	4.5	4.0	3.6	3.2	2.7	2.3	1.9	1.5	1.0
11.0	5.0	4.6	4.2	3.7	3.3	2.9	2.4	2.0	1.6	1.1
11.2	5.2	4.7	4.3	3.9	3.4	3.0	2.6	2.1	1.7	1.3
11.4	5.3	4.9	4.4	4.0	3.6	3.1	2.7	2.3	1.8	1.4
11.6	5.4	5.0	4.6	4.1	3.7	3.3	2.8	2.4	2.0	1.5
11.8	5.6	5.1	4.7	4.3	3.8	3.4	3.0	2.5	2.1	1.7
12.0	5.7	5.3	4.8	4.4	4.0	3.5	3.1	2.7	2.2	1.8
12.2	5.8	5.4	5.0	4.5	4.1	3.7	3.2	2.8	2.4	1.9
12.4	6.0	5.5	5.1	4.7	4.2	3.8	3.4	2.9	2.5	2.1
12.6	6.1	5.7	5.2	4.8	4.4	3.9	3.5	3.1	2.6	2.2
12.8	6.2	5.8	5.4	5.0	4.5	4.1	3.6	3.2	2.8	2.4
13.0	6.4	6.0	5.5	5.1	4.7	4.2	3.8	3.4	2.9	2.5
13.2	6.5	6.1	5.7	5.2	4.8	4.3	3.9	3.5	3.1	2.6
13.4	6.7	6.2	5.8	5.4	4.9	4.5	4.1	3.7	3.2	2.8
13.6	6.8	6.4	6.0	5.5	5.1	4.7	4.2	3.8	3.4	2.9
13.8	7.0	6.5	6.1	5.7	5.2	4.8	4.4	3.9	3.5	3.1
14.0	7.1	6.7	6.3	5.8	5.4	5.0	4.5	4.1	3.7	3.2
14.2	7.3	6.8	6.4	6.0	5.6	5.1	4.7	4.3	3.8	3.4
14.4	7.4	7.0	6.6	6.1	5.7	5.3	4.8	4.4	4.0	3.5
14.6	7.6	7.2	6.7	6.3	5.9	5.4	5.0	4.6	4.1	3.7
14.8	7.7	7.3	6.9	6.4	6.0	5.6	5.2	4.7	4.3	3.9
15.0	7.9	7.5	7.0	6.6	6.2	5.7	5.3	4.9	4.4	4.0
15.2	8.1	7.6	7.2	6.8	6.3	5.9	5.5	5.0	4.6	4.2
15.4	8.2	7.8	7.4	6.9	6.5	6.1	5.6	5.2	4.8	4.3
15.6	8.4	8.0	7.5	7.1	6.7	6.2	5.8	5.4	4.9	4.5
15.8	8.6	8.1	7.7	7.3	6.8	6.4	6.0	5.5	5.1	4.7
16.0	8.7	8.3	7.9	7.4	7.0	6.6	6.1	5.7	5.3	4.8

TABLE 2.—*The vapor pressure in millimeters for stations on the Rocky Mountain plateau*—Continued.

B=645 mm.

$t-t_1$	0	1	2	3	4	5	6	7	8	9	10
t_1 16.0	13.5	13.1	12.6	12.2	11.8	11.3	10.9	10.5	10.0	9.6	9.2
16.1	13.6	13.2	12.7	12.3	11.9	11.4	11.0	10.6	10.1	9.7	9.3
16.2	13.7	13.2	12.8	12.4	11.9	11.5	11.1	10.6	10.2	9.8	9.3
16.3	13.8	13.3	12.9	12.5	12.0	11.6	11.2	10.7	10.3	9.9	9.4
16.4	13.9	13.4	13.0	12.6	12.1	11.7	11.3	10.8	10.4	10.0	9.5
16.5	14.0	13.5	13.1	12.6	12.2	11.8	11.3	10.9	10.5	10.0	9.6
16.6	14.0	13.6	13.2	12.7	12.3	11.9	11.4	11.0	10.6	10.1	9.7
16.7	14.1	13.7	13.3	12.8	12.4	12.0	11.5	11.1	10.6	10.2	9.8
16.8	14.2	13.8	13.3	12.9	12.5	12.0	11.6	11.2	10.7	10.3	9.9
16.9	14.3	13.9	13.4	13.0	12.6	12.1	11.7	11.3	10.8	10.4	10.0
17.0	14.4	14.0	13.5	13.1	12.7	12.2	11.8	11.4	10.9	10.5	10.1
17.1	14.5	14.1	13.6	13.2	12.8	12.3	11.9	11.5	11.0	10.6	10.1
17.2	14.6	14.1	13.7	13.3	12.8	12.4	12.0	11.5	11.1	10.7	10.2
17.3	14.7	14.2	13.8	13.4	12.9	12.5	12.1	11.6	11.2	10.8	10.3
17.4	14.8	14.3	13.9	13.5	13.0	12.6	12.2	11.7	11.3	10.9	10.4
17.5	14.9	14.4	14.0	13.5	13.1	12.7	12.3	11.8	11.4	11.0	10.5
17.6	15.0	14.5	14.1	13.6	13.2	12.8	12.3	11.9	11.5	11.0	10.6
17.7	15.0	14.6	14.2	13.7	13.3	12.9	12.4	12.0	11.6	11.1	10.7
17.8	15.1	14.7	14.3	13.8	13.4	13.0	12.5	12.1	11.7	11.2	10.8
17.9	15.2	14.8	14.4	13.9	13.5	13.1	12.6	12.2	11.8	11.3	10.9
18.0	15.3	14.9	14.5	14.0	13.6	13.2	12.7	12.3	11.9	11.4	11.0
18.1	15.4	15.0	14.6	14.1	13.7	13.3	12.8	12.4	12.0	11.5	11.1
18.2	15.5	15.1	14.7	14.2	13.8	13.3	12.9	12.5	12.0	11.6	11.2
18.3	15.6	15.2	14.8	14.3	13.9	13.4	13.0	12.6	12.1	11.7	11.3
18.4	15.7	15.3	14.9	14.4	14.0	13.5	13.1	12.7	12.2	11.8	11.4
18.5	15.8	15.4	15.0	14.5	14.1	13.6	13.2	12.8	12.3	11.9	11.5
18.6	15.9	15.5	15.1	14.6	14.2	13.7	13.3	12.9	12.4	12.0	11.6
18.7	16.0	15.6	15.2	14.7	14.3	13.8	13.4	13.0	12.5	12.1	11.7
18.8	16.1	15.7	15.3	14.8	14.4	13.9	13.5	13.1	12.6	12.2	11.8
18.9	16.2	15.8	15.3	14.9	14.5	14.0	13.6	13.2	12.7	12.3	11.9
19.0	16.3	15.9	15.4	15.0	14.6	14.1	13.7	13.3	12.8	12.4	12.0
19.1	16.4	16.0	15.5	15.1	14.7	14.2	13.8	13.4	12.9	12.5	12.1
19.2	16.5	16.1	15.6	15.2	14.8	14.3	13.9	13.5	13.0	12.6	12.2
19.3	16.6	16.2	15.8	15.3	14.9	14.4	14.0	13.6	13.1	12.7	12.3
19.4	16.7	16.3	15.9	15.4	15.0	14.6	14.1	13.7	13.2	12.8	12.4
19.5	16.8	16.4	16.0	15.5	15.1	14.7	14.2	13.8	13.3	12.9	12.5
19.6	16.9	16.5	16.1	15.6	15.2	14.8	14.3	13.9	13.5	13.0	12.6
19.7	17.0	16.6	16.2	15.7	15.3	14.9	14.4	14.0	13.6	13.1	12.7
19.8	17.2	16.7	16.3	15.8	15.4	15.0	14.5	14.1	13.7	13.2	12.8
19.9	17.3	16.8	16.4	16.0	15.5	15.1	14.6	14.2	13.8	13.3	12.9
20.0	17.4	16.9	16.5	16.1	15.6	15.2	14.7	14.3	13.9	13.4	13.0

TABLE 2.—*The vapor pressure in millimeters for stations on the Rocky Mountain plateau*—Continued.

B=645 mm.

$t-t_1$	11	12	13	14	15	16	17	18	19	20
t_1 16.0	8.7	8.3	7.9	7.4	7.0	6.6	6.1	5.7	5.3	4.8
16.1	8.8	8.4	8.0	7.5	7.1	6.7	6.2	5.8	5.4	4.9
16.2	8.9	8.5	8.0	7.6	7.2	6.7	6.3	5.9	5.4	5.0
16.3	9.0	8.6	8.1	7.7	7.3	6.8	6.4	6.0	5.5	5.1
16.4	9.1	8.7	8.2	7.8	7.4	6.9	6.5	6.1	5.6	5.2
16.5	9.2	8.7	8.3	7.9	7.4	7.0	6.6	6.1	5.7	5.3
16.6	9.3	8.8	8.4	8.0	7.5	7.1	6.7	6.2	5.8	5.4
16.7	9.3	8.9	8.5	8.0	7.6	7.2	6.7	6.3	5.9	5.4
16.8	9.4	9.0	8.6	8.1	7.7	7.3	6.8	6.4	6.0	5.5
16.9	9.5	9.1	8.7	8.2	7.8	7.4	6.9	6.5	6.1	5.6
17.0	9.6	9.2	8.8	8.3	7.9	7.5	7.0	6.6	6.2	5.7
17.1	9.7	9.3	8.8	8.4	8.0	7.5	7.1	6.7	6.2	5.8
17.2	9.8	9.4	8.9	8.5	8.1	7.6	7.2	6.8	6.3	5.9
17.3	9.9	9.5	9.0	8.6	8.2	7.7	7.3	6.9	6.4	6.0
17.4	10.0	9.5	9.1	8.7	8.2	7.8	7.4	6.9	6.5	6.1
17.5	10.1	9.6	9.2	8.8	8.3	7.9	7.5	7.0	6.6	6.2
17.6	10.2	9.7	9.3	8.9	8.4	8.0	7.6	7.1	6.7	6.3
17.7	10.3	9.8	9.4	9.0	8.5	8.1	7.7	7.2	6.8	6.4
17.8	10.4	9.9	9.5	9.1	8.6	8.2	7.7	7.3	6.9	6.5
17.9	10.5	10.0	9.6	9.1	8.7	8.3	7.8	7.4	7.0	6.5
18.0	10.6	10.1	9.7	9.2	8.8	8.4	7.9	7.5	7.1	6.6
18.1	10.6	10.2	9.8	9.3	8.9	8.5	8.0	7.6	7.2	6.7
18.2	10.7	10.3	9.9	9.4	9.0	8.6	8.1	7.7	7.3	6.8
18.3	10.8	10.4	10.0	9.5	9.1	8.7	8.2	7.8	7.4	6.9
18.4	10.9	10.5	10.1	9.6	9.2	8.8	8.3	7.9	7.5	7.0
18.5	11.0	10.6	10.2	9.7	9.3	8.9	8.4	8.0	7.6	7.1
18.6	11.1	10.7	10.3	9.8	9.4	9.0	8.5	8.1	7.7	7.2
18.7	11.2	10.8	10.4	9.9	9.5	9.1	8.6	8.2	7.8	7.3
18.8	11.3	10.9	10.5	10.0	9.6	9.2	8.7	8.3	7.9	7.4
18.9	11.4	11.0	10.6	10.1	9.7	9.3	8.8	8.4	8.0	7.5
19.0	11.5	11.1	10.7	10.2	9.8	9.4	8.9	8.5	8.1	7.6
19.1	11.6	11.2	10.8	10.3	9.9	9.5	9.0	8.6	8.2	7.7
19.2	11.7	11.3	10.9	10.4	10.0	9.6	9.1	8.7	8.3	7.8
19.3	11.8	11.4	11.0	10.5	10.1	9.7	9.2	8.8	8.4	7.9
19.4	11.9	11.5	11.1	10.6	10.2	9.8	9.3	8.9	8.5	8.0
19.5	12.0	11.6	11.2	10.7	10.3	9.9	9.4	9.0	8.6	8.1
19.6	12.1	11.7	11.3	10.8	10.4	10.0	9.5	9.1	8.7	8.2
19.7	12.3	11.8	11.4	10.9	10.5	10.1	9.6	9.2	8.8	8.3
19.8	12.4	11.9	11.5	11.1	10.6	10.2	9.7	9.3	8.9	8.4
19.9	12.5	12.0	11.6	11.2	10.7	10.3	9.9	9.4	9.0	8.5
20.0	12.6	12.1	11.7	11.3	10.8	10.4	10.0	9.5	9.1	8.6

TABLE 2.—*The vapor pressure in millimeters for stations on the Rocky Mountain plateau*—Continued.

B=645 mm.

$t-t_1$	0	1	2	3	4	5	6	7	8	9	10
t_1 20.0	17.4	16.9	16.5	16.1	15.6	15.2	14.7	14.3	13.9	13.4	13.0
20.1	17.5	17.0	16.6	16.2	15.7	15.3	14.8	14.4	14.0	13.6	13.1
20.2	17.6	17.1	16.7	16.3	15.8	15.4	14.9	14.5	14.1	13.7	13.2
20.3	17.7	17.3	16.8	16.4	15.9	15.5	15.1	14.6	14.2	13.8	13.3
20.4	17.8	17.4	16.9	16.5	16.1	15.6	15.2	14.8	14.3	13.9	13.4
20.5	17.9	17.5	17.0	16.6	16.2	15.7	15.3	14.9	14.4	14.0	13.6
20.6	18.0	17.6	17.1	16.7	16.3	15.8	15.4	15.0	14.5	14.1	13.7
20.7	18.1	17.7	17.3	16.8	16.4	16.0	15.5	15.1	14.6	14.2	13.8
20.8	18.2	17.8	17.4	16.9	16.5	16.1	15.6	15.2	14.8	14.3	13.9
20.9	18.4	17.9	17.5	17.0	16.6	16.2	15.7	15.3	14.9	14.4	14.0
21.0	18.5	18.0	17.6	17.2	16.7	16.3	15.9	15.4	15.0	14.5	14.1
21.1	18.6	18.1	17.7	17.3	16.8	16.4	16.0	15.5	15.1	14.7	14.2
21.2	18.7	18.3	17.8	17.4	16.9	16.5	16.1	15.6	15.2	14.8	14.3
21.3	18.8	18.4	17.9	17.5	17.1	16.6	16.2	15.8	15.3	14.9	14.4
21.4	18.9	18.5	18.0	17.6	17.2	16.7	16.3	15.9	15.4	15.0	14.6
21.5	19.0	18.6	18.2	17.7	17.3	16.9	16.4	16.0	15.6	15.1	14.7
21.6	19.2	18.7	18.3	17.9	17.4	17.0	16.5	16.1	15.7	15.2	14.8
21.7	19.3	18.8	18.4	18.0	17.5	17.1	16.7	16.2	15.8	15.3	14.9
21.8	19.4	19.0	18.5	18.1	17.6	17.2	16.8	16.3	15.9	15.5	15.0
21.9	19.5	19.1	18.6	18.2	17.8	17.3	16.9	16.5	16.0	15.6	15.1
22.0	19.6	19.2	18.8	18.3	17.9	17.4	17.0	16.6	16.1	15.7	15.2
22.1	19.8	19.3	18.9	18.4	18.0	17.6	17.1	16.7	16.3	15.8	15.4
22.2	19.9	19.4	19.0	18.6	18.1	17.7	17.3	16.8	16.4	15.9	15.5
22.3	20.0	19.6	19.1	18.7	18.2	17.8	17.4	16.9	16.5	16.1	15.6
22.4	20.1	19.7	19.2	18.8	18.4	17.9	17.5	17.1	16.6	16.2	15.7
22.5	20.2	19.8	19.4	18.9	18.5	18.1	17.6	17.2	16.7	16.3	15.9
22.6	20.4	19.9	19.5	19.0	18.6	18.2	17.7	17.3	16.9	16.4	16.0
22.7	20.5	20.0	19.6	19.2	18.7	18.3	17.9	17.4	17.0	16.5	16.1
22.8	20.6	20.2	19.7	19.3	18.9	18.4	18.0	17.6	17.1	16.7	16.2
22.9	20.7	20.3	19.9	19.4	19.0	18.5	18.1	17.7	17.2	16.8	16.4
23.0	20.9	20.4	20.0	19.5	19.1	18.7	18.2	17.8	17.4	16.9	16.5
23.1	21.0	20.5	20.1	19.7	19.2	18.8	18.4	17.9	17.5	17.0	16.6
23.2	21.1	20.6	20.2	19.8	19.3	18.9	18.5	18.1	17.6	17.2	16.7
23.3	21.2	20.8	20.4	19.9	19.5	19.1	18.6	18.2	17.7	17.3	16.9
23.4	21.4	20.9	20.5	20.1	19.6	19.2	18.7	18.3	17.8	17.4	17.0
23.5	21.5	21.1	20.6	20.2	19.8	19.3	18.8	18.4	18.0	17.6	17.2
23.6	21.6	21.2	20.8	20.3	19.9	19.4	19.0	18.6	18.1	17.7	17.3
23.7	21.8	21.3	20.9	20.4	20.0	19.6	19.1	18.7	18.3	17.8	17.4
23.8	21.9	21.5	21.0	20.6	20.1	19.7	19.3	18.8	18.4	18.0	17.5
23.9	22.0	21.6	21.1	20.7	20.3	19.8	19.4	19.0	18.5	18.1	17.6
24.0	22.2	21.7	21.3	20.8	20.4	20.0	19.5	19.1	18.7	18.2	17.8

TABLE 2.—*The vapor pressure in millimeters for stations on the Rocky Mountain plateau*—Continued.

B=645 mm.

$t-t_1$	11	12	13	14	15	16	17	18	19	20
t_1 20.0	12.6	12.1	11.7	11.3	10.8	10.4	10.0	9.5	9.1	8.6
20.1	12.7	12.2	11.8	11.4	10.9	10.5	10.1	9.6	9.2	8.8
20.2	12.8	12.4	11.9	11.5	11.0	10.6	10.2	9.7	9.3	8.9
20.3	12.9	12.5	12.0	11.6	11.2	10.7	10.3	9.8	9.4	9.0
20.4	13.0	12.6	12.1	11.7	11.3	10.8	10.4	10.0	9.5	9.1
20.5	13.1	12.7	12.2	11.8	11.4	10.9	10.5	10.1	9.6	9.2
20.6	13.2	12.8	12.4	11.9	11.5	11.0	10.6	10.2	9.7	9.3
20.7	13.3	12.9	12.5	12.0	11.6	11.2	10.7	10.3	9.8	9.4
20.8	13.4	13.0	12.6	12.1	11.7	11.3	10.8	10.4	10.0	9.5
20.9	13.6	13.1	12.7	12.2	11.8	11.4	10.9	10.5	10.1	9.6
21.0	13.7	13.2	12.8	12.4	11.9	11.5	11.1	10.6	10.2	9.8
21.1	13.8	13.3	12.9	12.5	12.0	11.6	11.2	10.7	10.3	9.9
21.2	13.9	13.5	13.0	12.6	12.1	11.7	11.3	10.8	10.4	10.0
21.3	14.0	13.6	13.1	12.7	12.3	11.8	11.4	11.0	10.5	10.1
21.4	14.1	13.7	13.2	12.8	12.4	12.0	11.5	11.1	10.6	10.2
21.5	14.2	13.8	13.4	12.9	12.5	12.1	11.6	11.2	10.8	10.3
21.6	14.4	13.9	13.5	13.1	12.6	12.2	11.8	11.3	10.9	10.4
21.7	14.5	14.0	13.6	13.2	12.7	12.3	11.9	11.4	11.0	10.5
21.8	14.6	14.2	13.7	13.3	12.8	12.4	12.0	11.5	11.1	10.7
21.9	14.7	14.3	13.8	13.4	13.0	12.5	12.1	11.7	11.2	10.8
22.0	14.8	14.4	14.0	13.5	13.1	12.6	12.2	11.8	11.3	10.9
22.1	14.9	14.5	14.1	13.6	13.2	12.8	12.3	11.9	11.5	11.0
22.2	15.1	14.6	14.2	13.8	13.3	12.9	12.4	12.0	11.6	11.1
22.3	15.2	14.8	14.3	13.9	13.4	13.0	12.6	12.1	11.7	11.3
22.4	15.3	14.9	14.4	14.0	13.6	13.2	12.7	12.3	11.8	11.4
22.5	15.4	15.0	14.6	14.1	13.7	13.3	12.8	12.4	11.9	11.5
22.6	15.6	15.1	14.7	14.2	13.8	13.4	12.9	12.5	12.1	11.6
22.7	15.7	15.2	14.8	14.4	13.9	13.5	13.1	12.6	12.2	11.7
22.8	15.8	15.4	14.9	14.5	14.1	13.6	13.2	12.7	12.3	11.9
22.9	15.9	15.5	15.1	14.6	14.2	13.7	13.3	12.9	12.4	12.0
23.0	16.1	15.6	15.2	14.7	14.3	13.9	13.4	13.0	12.6	12.1
23.1	16.2	15.7	15.3	14.9	14.4	14.0	13.5	13.1	12.7	12.2
23.2	16.3	15.9	15.4	15.0	14.6	14.1	13.7	13.2	12.8	12.4
23.3	16.4	16.0	15.6	15.1	14.7	14.2	13.8	13.4	12.9	12.5
23.4	16.6	16.1	15.7	15.3	14.8	14.4	13.9	13.5	13.1	12.6
23.5	16.7	16.3	15.8	15.4	14.9	14.5	14.1	13.6	13.2	12.7
23.6	16.8	16.4	15.9	15.5	15.1	14.6	14.2	13.8	13.3	12.9
23.7	17.0	16.5	16.1	15.6	15.2	14.8	14.3	13.9	13.4	13.0
23.8	17.1	16.6	16.2	15.8	15.3	14.9	14.4	14.0	13.6	13.1
23.9	17.2	16.8	16.3	15.9	15.5	15.0	14.6	14.1	13.7	13.3
24.0	17.3	16.9	16.5	16.0	15.6	15.2	14.7	14.3	13.8	13.4

TABLE 2.—*The vapor pressure in millimeters for stations on the Rocky Mountain plateau*—Continued.

B=645 mm.

$t-t_1$	0	1	2	3	4	5	6	7	8	9	10
t_1 24.0	22.2	21.7	21.3	20.8	20.4	20.0	19.5	19.1	18.7	18.2	17.8
24.1	22.3	21.9	21.4	21.0	20.5	20.1	19.7	19.2	18.8	18.4	17.9
24.2	22.4	22.0	21.5	21.1	20.7	20.2	19.8	19.4	18.9	18.5	18.0
24.3	22.6	22.1	21.7	21.2	20.8	20.4	19.9	19.5	19.0	18.6	18.2
24.4	22.7	22.3	21.8	21.4	20.9	20.5	20.1	19.6	19.2	18.8	18.3
24.5	22.8	22.4	22.0	21.5	21.1	20.6	20.2	19.8	19.3	18.9	18.5
24.6	23.0	22.5	22.1	21.6	21.2	20.8	20.3	19.9	19.5	19.0	18.6
24.7	23.1	22.7	22.2	21.8	21.3	20.9	20.5	20.0	19.6	19.2	18.7
24.8	23.2	22.8	22.4	21.9	21.5	21.1	20.6	20.2	19.7	19.3	18.9
24.9	23.4	22.9	22.5	22.1	21.6	21.2	20.8	20.3	19.9	19.4	19.0
25.0	23.5	23.1	22.6	22.2	21.7	21.3	20.9	20.5	20.0	19.6	19.1
25.1	23.7	23.2	22.8	22.3	21.9	21.5	21.0	20.6	20.2	19.7	19.3
25.2	23.8	23.4	22.9	22.5	22.0	21.6	21.2	20.7	20.3	19.9	19.4
25.3	23.9	23.5	23.1	22.6	22.2	21.7	21.3	20.9	20.4	20.0	19.5
25.4	24.1	23.6	23.2	22.8	22.3	21.9	21.5	21.0	20.6	20.1	19.7
25.5	24.2	23.8	23.4	22.9	22.5	22.0	21.6	21.2	20.7	20.3	19.9
25.6	24.4	23.9	23.5	23.1	22.6	22.2	21.7	21.3	20.9	20.4	20.0
25.7	24.5	24.1	23.6	23.2	22.7	22.3	21.9	21.5	21.0	20.6	20.1
25.8	24.7	24.2	23.8	23.3	22.9	22.5	22.0	21.6	21.2	20.7	20.3
25.9	24.8	24.4	23.9	23.5	23.1	22.6	22.2	21.7	21.3	20.9	20.4
26.0	25.0	24.5	24.1	23.6	23.2	22.8	22.3	21.9	21.5	21.0	20.6
26.1	25.1	24.7	24.2	23.8	23.3	22.9	22.5	22.0	21.6	21.2	20.7
26.2	25.3	24.8	24.4	23.9	23.5	23.1	22.6	22.2	21.7	21.3	20.9
26.3	25.4	25.0	24.5	24.1	23.6	23.2	22.7	22.3	21.9	21.5	21.0
26.4	25.6	25.1	24.7	24.2	23.8	23.4	22.9	22.5	22.0	21.6	21.2
26.5	25.7	25.3	24.8	24.4	23.9	23.5	23.1	22.6	22.2	21.8	21.3
26.6	25.9	25.4	25.0	24.5	24.1	23.7	23.2	22.8	22.4	21.9	21.5
26.7	26.0	25.6	25.1	24.7	24.3	23.9	23.4	22.9	22.5	22.1	21.6
26.8	26.2	25.7	25.3	24.8	24.4	24.0	23.5	23.1	22.6	22.2	21.8
26.9	26.3	25.9	25.4	25.0	24.6	24.1	23.7	23.2	22.8	22.4	22.0
27.0	26.5	26.0	25.6	25.2	24.7	24.3	23.8	23.4	23.0	22.5	22.1
27.1	26.6	26.2	25.8	25.3	24.9	24.4	24.0	23.6	23.1	22.7	22.2
27.2	26.8	26.3	25.9	25.4	25.0	24.6	24.1	23.7	23.3	22.8	22.4
27.3	26.9	26.5	26.1	25.6	25.2	24.7	24.3	23.9	23.4	23.0	22.5
27.4	27.1	26.7	26.2	25.8	25.3	24.9	24.4	24.0	23.6	23.1	22.7
27.5	27.3	26.8	26.4	25.9	25.5	25.1	24.6	24.2	23.7	23.3	22.9
27.6	27.4	27.0	26.5	26.1	25.7	25.2	24.8	24.3	23.9	23.5	23.0
27.7	27.6	27.1	26.7	26.3	25.8	25.4	24.9	24.5	24.1	23.6	23.2
27.8	27.7	27.3	26.8	26.4	26.0	25.5	25.1	24.6	24.2	23.8	23.3
27.9	27.9	27.5	27.0	26.6	26.1	25.7	25.3	24.8	24.4	23.9	23.5
28.0	28.1	27.6	27.2	26.8	26.3	25.9	25.4	25.0	24.5	24.1	23.7

TABLE 2.—*The vapor pressure in millimeters for stations on the Rocky Mountain plateau*—Continued.

B=645 mm.

$t-t_1$	11	12	13	14	15	16	17	18	19	20
t_1 24.0	17.3	16.9	16.5	16.0	15.6	15.2	14.7	14.3	13.8	13.4
24.1	17.5	17.0	16.6	16.2	15.7	15.3	14.8	14.4	14.0	13.5
24.2	17.6	17.2	16.7	16.3	15.9	15.4	15.0	14.5	14.1	13.7
24.3	17.7	17.3	16.9	16.4	16.0	15.5	15.1	14.7	14.2	13.8
24.4	17.9	17.4	17.0	16.6	16.1	15.7	15.3	14.8	14.4	13.9
24.5	18.0	17.6	17.1	16.7	16.3	15.8	15.4	15.0	14.5	14.1
24.6	18.1	17.7	17.3	16.8	16.4	16.0	15.5	15.1	14.6	14.2
24.7	18.3	17.8	17.4	17.0	16.5	16.1	15.7	15.2	14.8	14.3
24.8	18.4	18.0	17.5	17.1	16.7	16.2	15.8	15.4	14.9	14.5
24.9	18.6	18.1	17.7	17.3	16.8	16.4	15.9	15.5	15.1	14.6
25.0	18.7	18.3	17.8	17.4	17.0	16.5	16.1	15.6	15.2	14.8
25.1	18.8	18.4	18.0	17.5	17.1	16.7	16.2	15.8	15.3	14.9
25.2	19.0	18.5	18.1	17.6	17.2	16.8	16.4	15.9	15.5	15.0
25.3	19.1	18.7	18.2	17.8	17.4	16.9	16.5	16.1	15.6	15.2
25.4	19.3	18.8	18.4	17.9	17.5	17.1	16.6	16.2	15.8	15.3
25.5	19.4	19.0	18.5	18.1	17.7	17.2	16.8	16.3	15.9	15.5
25.6	19.5	19.1	18.7	18.2	17.8	17.4	16.9	16.5	16.0	15.6
25.7	19.7	19.3	18.8	18.4	17.9	17.5	17.1	16.6	16.2	15.8
25.8	19.8	19.4	19.0	18.5	18.1	17.7	17.2	16.8	16.3	15.9
25.9	20.0	19.5	19.1	18.7	18.2	17.8	17.4	16.9	16.5	16.0
26.0	20.1	19.7	19.3	18.8	18.4	17.9	17.5	17.1	16.6	16.2
26.1	20.3	19.8	19.4	19.0	18.5	18.1	17.6	17.2	16.8	16.3
26.2	20.4	20.0	19.6	19.1	18.7	18.2	17.8	17.4	16.9	16.5
26.3	20.6	20.1	19.7	19.2	18.8	18.4	17.9	17.5	17.1	16.6
26.4	20.7	20.3	19.9	19.4	19.0	18.5	18.1	17.7	17.2	16.8
26.5	20.9	20.4	20.0	19.6	19.1	18.7	18.3	17.8	17.4	17.0
26.6	21.0	20.6	20.2	19.7	19.3	18.8	18.4	18.0	17.5	17.1
26.7	21.2	20.7	20.3	19.9	19.4	19.0	18.6	18.1	17.7	17.2
26.8	21.3	20.9	20.5	20.0	19.6	19.1	18.7	18.3	17.8	17.4
26.9	21.5	21.1	20.6	20.2	19.7	19.3	18.9	18.4	18.0	17.5
27.0	21.6	21.2	20.8	20.3	19.9	19.4	19.0	18.6	18.1	17.7
27.1	21.8	21.4	20.9	20.5	20.0	19.6	19.2	18.7	18.3	17.9
27.2	21.9	21.5	21.1	20.6	20.2	19.8	19.3	18.9	18.4	18.0
27.3	22.1	21.7	21.2	20.8	20.4	19.9	19.5	19.0	18.6	18.2
27.4	22.3	21.8	21.4	21.0	20.5	20.1	19.6	19.2	18.8	18.3
27.5	22.4	22.0	21.6	21.1	20.7	20.2	19.8	19.3	18.9	18.5
27.6	22.6	22.1	21.7	21.3	20.8	20.4	20.0	19.5	19.1	18.6
27.7	22.7	22.3	21.9	21.4	21.0	20.6	20.1	19.7	19.2	18.8
27.8	22.9	22.5	22.0	21.6	21.1	20.7	20.3	19.8	19.4	19.0
27.9	23.1	22.6	22.2	21.7	21.3	20.9	20.5	20.0	19.5	19.1
28.0	23.2	22.8	22.4	21.9	21.5	21.0	20.6	20.2	19.7	19.3

TABLE 2.—*The vapor pressure in millimeters for stations on the Rocky Mountain plateau*—Continued.

B=645 mm.

$t-t_1$	0	1	2	3	4	5	6	7	8	9	10
t_1 28.0	28.1	27.6	27.2	26.8	26.3	25.9	25.4	25.0	24.5	24.1	23.7
28.1	28.2	27.8	27.4	26.9	26.5	26.0	25.6	25.2	24.7	24.3	23.8
28.2	28.4	28.0	27.5	27.1	26.6	26.2	25.8	25.3	24.9	24.4	24.0
28.3	28.6	28.1	27.7	27.2	26.8	26.4	25.9	25.5	25.0	24.6	24.2
28.4	28.7	28.3	27.9	27.4	27.0	26.5	26.1	25.7	25.2	24.8	24.3
28.5	28.9	28.5	28.0	27.6	27.1	26.7	26.3	25.8	25.4	24.9	24.5
28.6	29.1	28.6	28.2	27.7	27.3	26.9	26.4	26.0	25.5	25.1	24.7
28.7	29.2	28.8	28.4	27.9	27.5	27.0	26.6	26.2	25.7	25.3	24.8
28.8	29.4	29.0	28.5	28.1	27.6	27.2	26.8	26.3	25.9	25.4	25.0
28.9	29.6	29.1	28.7	28.3	27.8	27.4	26.9	26.5	26.1	25.6	25.2
29.0	29.7	29.3	28.9	28.4	28.0	27.5	27.1	26.7	26.2	25.8	25.3
29.1	29.9	29.5	29.0	28.6	28.2	27.7	27.3	26.8	26.4	26.0	25.5
29.2	30.1	29.6	29.2	28.8	28.3	27.9	27.5	27.0	26.6	26.1	25.7
29.3	30.3	29.8	29.4	28.9	28.5	28.1	27.6	27.2	26.7	26.3	25.9
29.4	30.4	30.0	29.6	29.1	28.7	28.2	27.8	27.4	26.9	26.5	26.0
29.5	30.6	30.2	29.7	29.3	28.9	28.4	28.0	27.5	27.1	26.7	26.2
29.6	30.8	30.3	29.9	29.5	29.0	28.6	28.1	27.7	27.2	26.8	26.4
29.7	31.0	30.5	30.1	29.6	29.2	28.8	28.3	27.9	27.4	27.0	26.6
29.8	31.2	30.7	30.3	29.8	29.4	28.9	28.5	28.1	27.6	27.2	26.7
29.9	31.3	30.9	30.4	30.0	29.6	29.1	28.7	28.2	27.8	27.4	26.9
30.0	31.5	31.1	30.6	30.2	29.7	29.3	28.9	28.4	28.0	27.5	27.1
30.1	31.7	31.2	30.8	30.4	29.9	29.5	29.0	28.6	28.2	27.7	27.3
30.2	31.9	31.4	31.0	30.5	30.1	29.7	29.2	28.8	28.3	27.9	27.5
30.3	32.1	31.6	31.2	30.7	30.3	29.9	29.4	29.0	28.5	28.1	27.7
30.4	32.2	31.8	31.4	30.9	30.5	30.0	29.6	29.2	28.7	28.3	27.8
30.5	32.4	32.0	31.5	31.1	30.7	30.2	29.8	29.3	28.9	28.5	28.0
30.6	32.6	32.2	31.7	31.3	30.8	30.4	30.0	29.5	29.1	28.6	28.2
30.7	32.8	32.4	31.9	31.5	31.0	30.6	30.2	29.7	29.3	28.8	28.4
30.8	33.0	32.5	32.1	31.7	31.2	30.8	30.3	29.9	29.5	29.0	28.6
30.9	33.2	32.7	32.3	31.9	31.4	31.0	30.5	30.1	29.7	29.2	28.8
31.0	33.4	32.9	32.5	32.0	31.6	31.2	30.7	30.3	29.8	29.4	29.0
31.1	33.6	33.1	32.7	32.2	31.8	31.4	30.9	30.5	30.0	29.6	29.2
31.2	33.8	33.3	32.9	32.4	32.0	31.5	31.1	30.7	30.2	29.8	29.3
31.3	33.9	33.5	33.1	32.6	32.2	31.7	31.3	30.9	30.4	30.0	29.5
31.4	34.1	33.7	33.3	32.8	32.4	31.9	31.5	31.1	30.6	30.2	29.7
31.5	34.3	33.9	33.4	33.0	32.6	32.1	31.7	31.2	30.8	30.4	29.9
31.6	34.5	34.1	33.6	33.2	32.8	32.3	31.9	31.4	31.0	30.6	30.1
31.7	34.7	34.3	33.8	33.4	33.0	32.5	32.1	31.6	31.2	30.7	30.3
31.8	34.9	34.5	34.0	33.6	33.2	32.7	32.3	31.8	31.4	30.9	30.5
31.9	35.1	34.7	34.2	33.8	33.4	32.9	32.5	32.0	31.6	31.1	30.7
32.0	35.3	34.9	34.4	34.0	33.6	33.1	32.7	32.2	31.8	31.3	30.9

TABLE 2.—*The vapor pressure in millimeters for stations on the Rocky Mountain plateau*—Continued.

B=645 mm.

$t-t_1$	11	12	13	14	15	16	17	18	19	20
t_1 28.0	23.2	22.8	22.4	21.9	21.5	21.0	20.6	20.2	19.7	19.3
28.1	23.4	23.0	22.5	22.1	21.6	21.2	20.8	20.3	19.9	19.5
28.2	23.6	23.1	22.7	22.2	21.8	21.4	20.9	20.5	20.0	19.6
28.3	23.7	23.3	22.8	22.4	22.0	21.5	21.1	20.6	20.2	19.8
28.4	23.9	23.5	23.0	22.6	22.1	21.7	21.3	20.8	20.4	19.9
28.5	24.1	23.6	23.2	22.7	22.3	21.9	21.4	21.0	20.5	20.1
28.6	24.2	23.8	23.3	22.9	22.5	22.0	21.6	21.1	20.7	20.3
28.7	24.4	24.0	23.5	23.1	22.6	22.2	21.8	21.3	20.9	20.4
28.8	24.6	24.1	23.7	23.2	22.8	22.4	21.9	21.5	21.0	20.6
28.9	24.7	24.3	23.9	23.4	23.0	22.5	22.1	21.7	21.3	20.8
29.0	24.9	24.5	24.0	23.6	23.1	22.7	22.3	21.8	21.4	20.9
29.1	25.1	24.6	24.2	23.8	23.3	22.9	22.4	22.0	21.6	21.1
29.2	25.3	24.8	24.4	23.9	23.5	23.1	22.6	22.2	21.7	21.3
29.3	25.4	25.0	24.5	24.1	23.7	23.2	22.8	22.3	21.9	21.5
29.4	25.6	25.2	24.7	24.3	23.8	23.4	22.9	22.5	22.1	21.6
29.5	25.8	25.3	24.9	24.5	24.0	23.6	23.1	22.7	22.3	21.8
29.6	26.0	25.5	25.1	24.6	24.2	23.8	23.3	22.9	22.4	22.0
29.7	26.1	25.7	25.2	24.8	24.4	23.9	23.5	23.0	22.6	22.2
29.8	26.3	25.9	25.4	25.0	24.5	24.1	23.7	23.2	22.8	22.3
29.9	26.5	26.0	25.6	25.2	24.7	24.3	23.8	23.4	23.0	22.5
30.0	26.7	26.2	25.8	25.3	24.9	24.4	24.0	23.6	23.1	22.7
30.1	26.8	26.4	26.0	25.5	25.1	24.6	24.2	23.8	23.3	22.9
30.2	27.0	26.6	26.1	25.7	25.3	24.8	24.4	23.9	23.5	23.1
30.3	27.2	26.8	26.3	25.9	25.5	25.0	24.6	24.1	23.7	23.3
30.4	27.4	27.0	26.5	26.1	25.6	25.2	24.8	24.3	23.9	23.4
30.5	27.6	27.1	26.7	26.3	25.8	25.4	24.9	24.5	24.1	23.6
30.6	27.8	27.3	26.9	26.4	26.0	25.6	25.1	24.7	24.2	23.8
30.7	28.0	27.5	27.1	26.6	26.2	25.7	25.3	24.9	24.4	24.0
30.8	28.1	27.7	27.3	26.8	26.4	25.9	25.5	25.1	24.6	24.2
30.9	28.3	27.9	27.4	27.0	26.6	26.1	25.7	25.2	24.8	24.4
31.0	28.5	28.1	27.6	27.2	26.8	26.3	25.9	25.4	25.0	24.6
31.1	28.7	28.3	27.8	27.4	26.9	26.5	26.1	25.6	25.2	24.7
31.2	28.9	28.5	28.0	27.6	27.1	26.7	26.3	25.8	25.4	24.9
31.3	29.1	28.6	28.2	27.8	27.3	26.9	26.4	26.0	25.6	25.1
31.4	29.3	28.8	28.4	28.0	27.5	27.1	26.6	26.2	25.8	25.3
31.5	29.5	29.0	28.6	28.2	27.7	27.3	26.8	26.4	26.0	25.5
31.6	29.7	29.2	28.8	28.4	27.9	27.5	27.0	26.6	26.1	25.7
31.7	29.9	29.4	29.0	28.5	28.1	27.7	27.2	26.8	26.3	25.9
31.8	30.1	29.6	29.2	28.7	28.3	27.9	27.4	27.0	26.5	26.1
31.9	30.3	29.8	29.4	28.9	28.5	28.1	27.6	27.2	26.7	26.3
32.0	30.5	30.0	29.6	29.1	28.7	28.3	27.8	27.4	26.9	26.5

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TABLE 2.—*The vapor pressure in millimeters for stations on the Rocky Mountain plateau*—Continued.

B=645 mm.

$t-t_1$	0	1	2	3	4	5	6	7	8	9	10
t_1 32.0	35.3	34.9	34.4	34.0	33.6	33.1	32.7	32.2	31.8	31.3	30.9
32.1	35.5	35.1	34.6	34.2	33.8	33.3	32.9	32.4	32.0	31.5	31.1
32.2	35.7	35.3	34.8	34.4	34.0	33.5	33.1	32.6	32.2	31.7	31.3
32.3	35.9	35.5	35.0	34.6	34.2	33.7	33.3	32.8	32.4	31.9	31.5
32.4	36.1	35.7	35.2	34.8	34.4	33.9	33.5	33.0	32.6	32.2	31.7
32.5	36.3	35.9	35.4	35.0	34.6	34.1	33.7	33.2	32.8	32.4	31.9
32.6	36.5	36.1	35.7	35.2	34.8	34.3	33.9	33.4	33.0	32.6	32.1
32.7	36.7	36.3	35.9	35.4	35.0	34.5	34.1	33.6	33.2	32.8	32.3
32.8	37.0	36.5	36.1	35.6	35.2	34.7	34.3	33.9	33.4	33.0	32.5
32.9	37.2	36.7	36.3	35.8	35.4	35.0	34.5	34.1	33.6	33.2	32.7
33.0	37.4	36.9	36.5	36.0	35.6	35.2	34.7	34.3	33.8	33.4	33.0
33.1	37.6	37.1	36.7	36.2	35.8	35.4	34.9	34.5	34.0	33.6	33.2
33.2	37.8	37.3	36.9	36.5	36.0	35.6	35.1	34.7	34.3	33.8	33.4
33.3	38.0	37.6	37.1	36.7	36.2	35.8	35.3	34.9	34.5	34.0	33.6
33.4	38.2	37.8	37.3	36.9	36.5	36.0	35.6	35.1	34.7	34.2	33.8
33.5	38.4	38.0	37.5	37.1	36.7	36.2	35.8	35.3	34.9	34.5	34.0
33.6	38.7	38.2	37.8	37.3	36.9	36.4	36.0	35.6	35.1	34.7	34.2
33.7	38.9	38.4	38.0	37.5	37.1	36.7	36.2	35.8	35.3	34.9	34.4
33.8	39.1	38.6	38.2	37.8	37.3	36.9	36.4	36.0	35.5	35.1	34.7
33.9	39.3	38.9	38.4	38.0	37.5	37.1	36.6	36.2	35.7	35.3	34.9
34.0	39.5	39.1	38.6	38.2	37.8	37.3	36.9	36.4	36.0	35.5	35.1
34.1	39.7	39.3	38.8	38.4	38.0	37.5	37.1	36.6	36.2	35.8	35.3
34.2	40.0	39.5	39.1	38.6	38.2	37.8	37.3	36.9	36.4	36.0	35.5
34.3	40.2	39.7	39.3	38.9	38.4	38.0	37.5	37.1	36.7	36.2	35.8
34.4	40.4	40.0	39.5	39.1	38.6	38.2	37.8	37.3	36.9	36.4	36.0
34.5	40.6	40.2	39.8	39.3	38.9	38.4	38.0	37.5	37.1	36.7	36.2
34.6	40.9	40.4	40.0	39.5	39.1	38.7	38.2	37.8	37.3	36.9	36.4
34.7	41.1	40.6	40.2	39.8	39.3	38.9	38.4	38.0	37.5	37.1	36.7
34.8	41.3	40.9	40.4	40.0	39.5	39.1	38.7	38.2	37.8	37.3	36.9
34.9	41.6	41.1	40.7	40.2	39.8	39.3	38.9	38.5	38.0	37.6	37.1
35.0	41.8	41.3	40.9	40.5	40.0	39.6	39.1	38.7	38.2	37.8	37.4
35.1	42.0	41.6	41.1	40.7	40.2	39.8	39.4	38.9	38.5	38.0	37.6
35.2	42.2	41.8	41.4	40.9	40.5	40.0	39.6	39.1	38.7	38.3	37.8
35.3	42.5	42.0	41.6	41.2	40.7	40.3	39.8	39.4	38.9	38.5	38.1
35.4	42.7	42.3	41.8	41.4	41.0	40.5	40.1	39.6	39.2	38.7	38.3
35.5	43.0	42.5	42.1	41.6	41.2	40.7	40.3	39.9	39.4	39.0	38.5
35.6	43.2	42.7	42.3	41.9	41.4	41.0	40.5	40.1	39.6	39.2	38.8
35.7	43.4	43.0	42.5	42.1	41.7	41.2	40.8	40.3	39.9	39.4	39.0
35.8	43.7	43.2	42.7	42.3	41.9	41.4	41.0	40.6	40.1	39.7	39.2
35.9	43.9	43.5	43.0	42.6	42.1	41.7	41.3	40.8	40.4	39.9	39.5
36.0	44.2	43.7	43.3	42.8	42.4	41.9	41.5	41.1	40.6	40.2	39.7

TABLE 2.—*The vapor pressure in millimeters for stations on the Rocky Mountain plateau*—Continued.

B=645 mm.

$t-t_1$	11	12	13	14	15	16	17	18	19	20
t_1 32.0	30.5	30.0	29.6	29.1	28.7	28.3	27.8	27.4	26.9	26.5
32.1	30.7	30.2	29.8	29.3	28.9	28.5	28.0	27.6	27.1	26.7
32.2	30.9	30.4	30.0	29.5	29.1	28.7	28.2	27.8	27.3	26.9
32.3	31.1	30.6	30.2	29.7	29.3	28.9	28.4	28.0	27.5	27.1
32.4	31.3	30.8	30.4	29.9	29.5	29.1	28.6	28.2	27.7	27.3
32.5	31.5	31.0	30.6	30.1	29.7	29.3	28.8	28.4	27.9	27.5
32.6	31.7	31.2	30.8	30.4	29.9	29.5	29.0	28.6	28.1	27.7
32.7	31.9	31.4	31.0	30.6	30.1	29.7	29.2	28.8	28.3	27.9
32.8	32.1	31.6	31.2	30.8	30.3	29.9	29.4	29.0	28.6	28.1
32.9	32.3	31.9	31.4	31.0	30.5	30.1	29.7	29.2	28.8	28.3
33.0	32.5	32.1	31.6	31.2	30.7	30.3	29.9	29.4	29.0	28.5
33.1	32.7	32.3	31.8	31.4	31.0	30.5	30.1	29.6	29.2	28.7
33.2	32.9	32.5	32.0	31.6	31.2	30.7	30.3	29.8	29.4	29.0
33.3	33.1	32.7	32.3	31.8	31.4	30.9	30.5	30.0	29.6	29.2
33.4	33.4	32.9	32.5	32.0	31.6	31.1	30.7	30.3	29.8	29.4
33.5	33.6	33.1	32.7	32.2	31.8	31.4	30.9	30.5	30.0	29.6
33.6	33.8	33.3	32.9	32.5	32.0	31.6	31.1	30.7	30.3	29.8
33.7	34.0	33.6	33.1	32.7	32.2	31.8	31.4	30.9	30.5	30.0
33.8	34.2	33.8	33.3	32.9	32.4	32.0	31.6	31.1	30.7	30.2
33.9	34.4	34.0	33.6	33.1	32.7	32.2	31.8	31.3	30.9	30.5
34.0	34.7	34.2	33.8	33.3	32.9	32.4	32.0	31.6	31.1	30.7
34.1	34.9	34.4	34.0	33.5	33.1	32.7	32.2	31.8	31.3	30.9
34.2	35.1	34.7	34.2	33.8	33.3	32.9	32.4	32.0	31.6	31.1
34.3	35.3	34.9	34.4	34.0	33.6	33.1	32.7	32.2	31.8	31.3
34.4	35.5	35.1	34.7	34.2	33.8	33.3	32.9	32.4	32.0	31.6
34.5	35.8	35.3	34.9	34.4	34.0	33.6	33.1	32.7	32.2	31.8
34.6	36.0	35.6	35.1	34.7	34.2	33.8	33.3	32.9	32.5	32.0
34.7	36.2	35.8	35.3	34.9	34.5	34.0	33.6	33.1	32.7	32.2
34.8	36.5	36.0	35.6	35.1	34.7	34.2	33.8	33.4	32.9	32.5
34.9	36.7	36.2	35.8	35.4	34.9	34.5	34.0	33.6	33.1	32.7
35.0	36.9	36.5	36.0	35.6	35.1	34.7	34.3	33.8	33.4	32.9
35.1	37.1	36.7	36.3	35.8	35.4	34.9	34.5	34.0	33.6	33.2
35.2	37.4	36.9	36.5	36.0	35.6	35.2	34.7	34.3	33.8	33.4
35.3	37.6	37.2	36.7	36.3	35.8	35.4	34.9	34.5	34.1	33.6
35.4	37.8	37.4	37.0	36.5	36.1	35.6	35.2	34.7	34.3	33.9
35.5	38.1	37.6	37.2	36.8	36.3	35.9	35.4	35.0	34.5	34.1
35.6	38.3	37.9	37.4	37.0	36.5	36.1	35.7	35.2	34.8	34.3
35.7	38.6	38.1	37.7	37.2	36.7	36.3	35.9	35.5	35.0	34.6
35.8	38.8	38.4	37.9	37.5	37.0	36.6	36.1	35.7	35.3	34.8
35.9	39.0	38.6	38.2	37.7	37.3	36.8	36.4	35.9	35.5	35.1
36.0	39.3	38.8	38.4	38.0	37.5	37.1	36.6	36.2	35.7	35.3

TABLE 2.—*The vapor pressure in millimeters for stations on the Rocky Mountain plateau*—Continued.

B=645 mm.

$t-t_1$	0	1	2	3	4	5	6	7	8	9	10
t_1 36.0	44.2	43.7	43.3	42.8	42.4	41.9	41.5	41.1	40.6	40.2	39.7
36.1	44.4	44.0	43.5	43.1	42.6	42.2	41.7	41.3	40.9	40.4	40.0
36.2	44.7	44.2	43.8	43.3	42.9	42.4	42.0	41.5	41.1	40.7	40.2
36.3	44.9	44.4	44.0	43.6	43.1	42.7	42.2	41.8	41.3	40.9	40.5
36.4	45.1	44.7	44.3	43.8	43.4	42.9	42.5	42.0	41.6	41.1	40.7
36.5	45.4	44.9	44.5	44.1	43.6	43.2	42.7	42.3	41.8	41.4	41.0
36.6	45.6	45.2	44.8	44.3	43.9	43.4	43.0	42.5	42.1	41.6	41.2
36.7	45.9	45.4	45.0	44.6	44.1	43.7	43.2	42.8	42.3	41.9	41.5
36.8	46.1	45.7	45.3	44.8	44.4	43.9	43.5	43.0	42.6	42.1	41.7
36.9	46.4	45.9	45.5	45.1	44.6	44.2	43.7	43.3	42.8	42.4	42.0
37.0	46.7	46.2	45.8	45.3	44.9	44.4	44.0	43.5	43.1	42.7	42.2
37.1	46.9	46.5	46.0	45.6	45.1	44.7	44.2	43.8	43.3	42.9	42.5
37.2	47.2	46.7	46.3	45.8	45.4	44.9	44.5	44.1	43.6	43.2	42.7
37.3	47.4	47.0	46.5	46.1	45.6	45.2	44.8	44.3	43.9	43.4	43.0
37.4	47.7	47.2	46.8	46.3	45.9	45.5	45.0	44.6	44.1	43.7	43.2
37.5	47.9	47.5	47.1	46.6	46.2	45.7	45.3	44.8	44.4	43.9	43.5
37.6	48.2	47.8	47.3	46.9	46.4	46.0	45.5	45.1	44.6	44.2	43.8
37.7	48.5	48.0	47.6	47.1	46.7	46.2	45.8	45.4	44.9	44.5	44.0
37.8	48.7	48.3	47.8	47.4	47.0	46.5	46.1	45.6	45.2	44.7	44.3
37.9	49.0	48.5	48.1	47.7	47.2	46.8	46.3	45.9	45.4	45.0	44.5
38.0	49.3	48.8	48.4	47.9	47.5	47.0	46.6	46.2	45.7	45.3	44.8
38.1	49.5	49.1	48.6	48.2	47.8	47.3	46.9	46.4	46.0	45.5	45.1
38.2	49.8	49.4	48.9	48.5	48.0	47.6	47.1	46.7	46.2	45.8	45.4
38.3	50.1	49.6	49.2	48.7	48.3	47.8	47.4	47.0	46.5	46.1	45.6
38.4	50.3	49.9	49.5	49.0	48.6	48.1	47.7	47.2	46.8	46.3	45.9
38.5	50.6	50.2	49.7	49.3	48.8	48.4	47.9	47.5	47.1	46.6	46.2
38.6	50.9	50.4	50.0	49.6	49.1	48.7	48.2	47.8	47.3	46.9	46.4
38.7	51.2	50.7	50.3	49.8	49.4	48.9	48.5	48.0	47.6	47.2	46.7
38.8	51.4	51.0	50.6	50.1	49.7	49.2	48.8	48.3	47.9	47.4	47.0
38.9	51.7	51.3	50.8	50.4	50.0	49.5	49.1	48.6	48.2	47.7	47.3
39.0	52.0	51.6	51.1	50.7	50.2	49.8	49.3	48.9	48.4	48.0	47.6
39.1	52.3	51.8	51.4	50.9	50.5	50.1	49.6	49.2	48.7	48.3	47.8
39.2	52.6	52.1	51.7	51.2	50.8	50.3	49.9	49.4	49.0	48.6	48.1
39.3	52.8	52.4	52.0	51.5	51.1	50.6	50.2	49.7	49.3	48.8	48.4
39.4	53.1	52.7	52.2	51.8	51.4	50.9	50.5	50.0	49.6	49.1	48.7
39.5	53.4	53.0	52.5	52.1	51.6	51.2	50.7	50.3	49.9	49.4	49.0
39.6	53.7	53.3	52.8	52.4	51.9	51.5	51.0	50.6	50.1	49.7	49.3
39.7	54.0	53.5	53.1	52.7	52.2	51.8	51.3	50.9	50.4	50.0	49.5
39.8	54.3	53.8	53.4	52.9	52.5	52.1	51.6	51.2	50.7	50.3	49.8
39.9	54.6	54.1	53.7	53.2	52.8	52.3	51.9	51.5	51.0	50.6	50.1
40.0	54.9	54.4	54.0	53.5	53.1	52.6	52.2	51.8	51.3	50.9	50.4

TABLE 2.—*The vapor pressure in millimeters for stations on the Rocky Mountain plateau*—Continued.

B=645 m m.

$t-t_1$	11	12	13	14	15	16	17	18	19	20
t_1 36.0	39.3	38.8	38.4	38.0	37.5	37.1	36.6	36.2	35.7	35.3
36.1	39.5	39.1	38.6	38.2	37.7	37.3	36.9	36.4	36.0	35.5
36.2	39.8	39.3	38.9	38.4	38.0	37.6	37.1	36.7	36.2	35.8
36.3	40.0	39.6	39.1	38.7	38.2	37.8	37.4	36.9	36.5	36.0
36.4	40.3	39.8	39.4	38.9	38.5	38.0	37.6	37.2	36.7	36.3
36.5	40.5	40.1	39.6	39.2	38.7	38.3	37.8	37.4	37.0	36.5
36.6	40.8	40.3	39.9	39.4	39.0	38.5	38.1	37.7	37.2	36.8
36.7	41.0	40.6	40.1	39.7	39.2	38.8	38.4	37.9	37.5	37.0
36.8	41.3	40.8	40.4	39.9	39.5	39.0	38.6	38.2	37.7	37.3
36.9	41.5	41.1	40.6	40.2	39.7	39.3	38.8	38.4	38.0	37.5
37.0	41.8	41.3	40.9	40.4	40.0	39.5	39.1	38.7	38.2	37.8
37.1	42.0	41.6	41.1	40.7	40.2	39.8	39.4	38.9	38.5	38.0
37.2	42.3	41.8	41.4	40.9	40.5	40.1	39.6	39.2	38.7	38.3
37.3	42.5	42.1	41.6	41.2	40.8	40.3	39.9	39.4	39.0	38.5
37.4	42.8	42.4	41.9	41.5	41.0	40.6	40.1	39.7	39.2	38.8
37.5	43.1	42.6	42.2	41.7	41.3	40.8	40.4	39.9	39.5	39.1
37.6	43.3	42.9	42.4	42.0	41.5	41.1	40.7	40.2	39.8	39.3
37.7	43.6	43.1	42.7	42.2	41.8	41.4	40.9	40.5	40.0	39.6
37.8	43.8	43.4	43.0	42.5	42.1	41.6	41.2	40.7	40.3	39.8
37.9	44.1	43.7	43.2	42.8	42.3	41.9	41.4	41.0	40.6	40.1
38.0	44.4	43.9	43.5	43.0	42.6	42.2	41.7	41.3	40.8	40.4
38.1	44.6	44.2	43.8	43.3	42.8	42.4	42.0	41.5	41.1	40.6
38.2	44.9	44.5	44.0	43.6	43.1	42.7	42.2	41.8	41.4	40.9
38.3	45.2	44.7	44.3	43.8	43.4	43.0	42.5	42.1	41.6	41.2
38.4	45.5	45.0	44.6	44.1	43.7	43.2	42.8	42.3	41.9	41.5
38.5	45.7	45.3	44.8	44.4	43.9	43.5	43.1	42.6	42.2	41.7
38.6	46.0	45.6	45.1	44.7	44.2	43.8	43.3	42.9	42.4	42.0
38.7	46.3	45.8	45.4	44.9	44.5	44.0	43.6	43.2	42.7	42.3
38.8	46.5	46.1	45.7	45.2	44.8	44.3	43.9	43.4	43.0	42.5
38.9	46.8	46.4	45.9	45.5	45.1	44.6	44.2	43.7	43.3	42.8
39.0	47.1	46.7	46.2	45.8	45.3	44.9	44.4	44.0	43.6	43.1
39.1	47.4	46.9	46.5	46.1	45.6	45.2	44.7	44.3	43.8	43.4
39.2	47.7	47.2	46.8	46.3	45.9	45.4	45.0	44.6	44.1	43.7
39.3	47.9	47.5	47.1	46.6	46.2	45.7	45.3	44.8	44.4	43.9
39.4	48.2	47.8	47.3	46.9	46.5	46.0	45.6	45.1	44.7	44.2
39.5	48.5	48.1	47.6	47.2	46.7	46.3	45.8	45.4	45.0	44.5
39.6	48.8	48.4	47.9	47.5	47.0	46.6	46.1	45.7	45.2	44.8
39.7	49.1	48.6	48.2	47.8	47.3	46.9	46.4	46.0	45.5	45.1
39.8	49.4	48.9	48.5	48.0	47.6	47.2	46.7	46.3	45.8	45.4
39.9	49.7	49.2	48.8	48.3	47.9	47.4	47.0	46.6	46.1	45.7
40.0	50.0	49.5	49.1	48.6	48.2	47.7	47.3	46.9	46.4	46.0

TABLE 3.—*The pressure of aqueous vapor in saturated air at the dew-point temperature d, metric measures.*

d	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	4.57	4.60	4.64	4.67	4.70	4.74	4.77	4.80	4.84	4.87
1	4.91	4.94	4.98	5.02	5.05	5.09	5.12	5.16	5.20	5.23
2	5.27	5.31	5.35	5.39	5.42	5.46	5.50	5.54	5.58	5.62
3	5.66	5.70	5.74	5.78	5.82	5.86	5.90	5.94	5.99	6.03
4	6.07	6.11	6.15	6.20	6.24	6.28	6.33	6.37	6.42	6.46
5	6.51	6.55	6.60	6.64	6.69	6.74	6.78	6.83	6.88	6.92
6	6.97	7.02	7.07	7.12	7.17	7.22	7.26	7.31	7.36	7.42
7	7.47	7.52	7.57	7.62	7.67	7.72	7.78	7.83	7.88	7.94
8	7.99	8.05	8.10	8.15	8.21	8.27	8.32	8.38	8.43	8.49
9	8.55	8.61	8.66	8.72	8.78	8.84	8.90	8.96	9.02	9.08
10	9.14	9.20	9.26	9.32	9.39	9.45	9.51	9.58	9.64	9.70
11	9.77	9.83	9.90	9.96	10.03	10.09	10.16	10.23	10.30	10.36
12	10.43	10.50	10.57	10.64	10.71	10.78	10.85	10.92	10.99	11.07
13	11.14	11.21	11.28	11.36	11.43	11.50	11.58	11.66	11.73	11.81
14	11.88	11.96	12.04	12.12	12.19	12.27	12.35	12.43	12.51	12.59
15	12.67	12.76	12.84	12.92	13.00	13.09	13.17	13.25	13.34	13.42
16	13.51	13.60	13.68	13.77	13.86	13.95	14.04	14.12	14.21	14.30
17	14.40	14.49	14.58	14.67	14.76	14.86	14.95	15.04	15.14	15.23
18	15.33	15.43	15.52	15.62	15.72	15.82	15.92	16.02	16.12	16.22
19	16.32	16.42	16.52	16.63	16.73	16.83	16.94	17.04	17.15	17.26
20	17.36	17.47	17.58	17.69	17.80	17.91	18.02	18.13	18.24	18.35
21	18.47	18.58	18.69	18.81	18.92	19.04	19.16	19.27	19.39	19.51
22	19.63	19.75	19.87	19.99	20.11	20.24	20.36	20.48	20.61	20.73
23	20.86	20.98	21.11	21.24	21.37	21.50	21.63	21.76	21.89	22.02
24	22.15	22.29	22.42	22.55	22.69	22.83	22.96	23.10	23.24	23.38
25	23.52	23.66	23.80	23.94	24.08	24.23	24.37	24.52	24.66	24.81
26	24.96	25.10	25.25	25.40	25.55	25.70	25.86	26.01	26.16	26.32
27	26.47	26.63	26.78	26.94	27.10	27.26	27.42	27.58	27.74	27.90
28	28.07	28.23	28.39	28.56	28.73	28.89	29.06	29.23	29.40	29.57
29	29.74	29.92	30.09	30.26	30.44	30.62	30.79	30.97	31.15	31.33
30	31.51	31.69	31.87	32.06	32.24	32.43	32.61	32.80	32.99	33.18
31	33.37	33.56	33.75	33.94	34.14	34.33	34.53	34.72	34.92	35.12
32	35.32	35.52	35.72	35.92	36.13	36.33	36.54	36.74	36.95	37.16
33	37.37	37.58	37.79	38.00	38.22	38.43	38.65	38.87	39.08	39.30
34	39.52	39.74	39.97	40.19	40.41	40.64	40.87	41.09	41.32	41.55
35	41.78	42.02	42.25	42.48	42.72	42.96	43.19	43.43	43.67	43.92
36	44.16	44.40	44.65	44.89	45.14	45.39	45.64	45.89	46.14	46.39
37	46.65	46.90	47.16	47.42	47.68	47.94	48.20	48.46	48.73	48.99
38	49.26	49.53	49.80	50.07	50.34	50.61	50.89	51.16	51.44	51.72
39	52.00	52.28	52.56	52.84	53.13	53.41	53.70	53.99	54.28	54.57
40	54.87	55.16	55.46	55.75	56.05	56.35	56.65	56.95	57.26	57.56

TABLE 4.—*Relative humidity — centigrade degrees.* t = *temperature of the dry bulb;* d = *dew-point.*

d	0°	5°	10°	15°	20°	25°	30°
t–d 0.0	100	100	100	100	100	100	100
0.2	99	99	99	99	99	99	99
0.4	97	97	97	97	98	98	98
0.6	96	96	96	96	96	97	97
0.8	94	95	95	95	95	95	96
1.0	93	93	94	94	94	94	94
1.2	92	92	92	93	93	93	93
1.4	90	91	91	91	92	92	92
1.6	89	90	90	90	91	91	91
1.8	88	88	89	89	90	90	90
2.0	87	87	88	88	88	89	89
2.2	85	86	86	87	87	88	88
2.4	84	85	85	86	86	87	87
2.6	83	84	84	85	85	86	86
2.8	82	83	83	84	84	85	85
3.0	81	81	82	83	83	84	84
3.2	80	80	81	82	82	83	83
3.4	79	79	80	81	81	82	82
3.6	77	78	79	80	80	81	82
3.8	76	77	78	79	79	80	81
4.0	75	76	77	78	78	79	80
4.2	74	75	76	77	77	78	79
4.4	73	74	75	76	77	77	78
4.6	72	73	74	75	76	76	77
4.8	71	72	73	74	75	75	76
5.0	70	71	72	73	74	75	75
5.2	69	70	71	72	73	74	75
5.4	68	69	70	71	72	73	74
5.6	67	68	69	70	71	72	73
5.8	66	68	69	69	70	71	72
6.0	66	67	68	69	70	70	71
6.2	65	66	67	68	69	70	71
6.4	64	65	66	67	68	69	70
6.6	63	64	65	66	67	68	69
6.8	62	63	64	65	66	67	68
7.0	61	62	63	65	66	67	68
7.2	60	62	63	64	65	66	67
7.4	60	61	62	63	64	65	66
7.6	59	60	61	62	63	64	65
7.8	58	59	60	62	63	64	65
8.0	57	58	60	61	62	63	64
8.2	56	57	59	60	61	62	63
8.4	56	57	58	59	60	62	63
8.6	55	56	57	58	60	61	62
8.8	54	55	57	58	59	60	61
9.0	53	55	56	57	58	60	61
9.2	53	54	55	57	58	59	60
9.4	52	53	55	56	57	58	59
9.6	51	53	54	55	56	58	59
9.8	51	52	53	55	56	57	58
10.0	50	51	53	54	55	56	57
10.5	48	50	51	52	54	55	
11.0	47	48	49	51	52	53	
11.5	45	47	48	49	51	52	
12.0	44	45	47	48	49	50	
12.5	42	44	45	46	48	49	
13.0	41	43	44	45	46	48	
13.5	40	42	43	44	45	46	
14.0	38	40	41	43	44	45	
14.5	37	39	40	41	43	44	
15.0	36	37	39	40	42		
15.5	35	36	38	39	40		
16.0	34	35	37	38	39		
16.5	33	34	36	37	38		
17.0	32	33	35	36	37		
17.5	31	32	34	35	36		
18.0	30	31	33	34	35		
18.5	29	30	32	33	34		
19.0	28	29	31	32	33		
19.5	27	29	30	31	33		
20.0	26	28	29	30	32		
21.0	25	26	27	29			
22.0	23	25	26	27			
23.0	22	23	24	26			
24.0	21	22	23	24			
25.0	19	21	22	23			
26.0	18	20	21				
27.0	17	18	20				
28.0	16	17	19				
29.0	15	16	18				
30.0	14	16	17				

TABLE 5.—*An auxiliary table for computing Table 6.*

$$e_d\, E_1 = 0.100\, e_s \frac{de}{dS}.$$

Temperature of saturation	e_s	de	$\frac{de}{dS}$	$e_s \frac{de}{dS}$	$0.100\, e_s \frac{de}{dS}$
S 0	4.57	.32	.330	1.51	0.15
1	4.91	.34	.350	1.72	0.17
2	5.27	.36	.375	1.98	0.20
3	5.66	.39	.400	2.26	0.23
4	6.07	.41	.425	2.58	0.26
5	6.51	.44	.450	2.93	0.29
6	6.97	.46	.480	3.35	0.34
7	7.47	.50	.510	3.81	0.38
8	7.99	.52	.540	4.31	0.43
9	8.55	.56	.575	4.92	0.49
10	9.14	.59	.610	5.58	0.56
11	9.77	.63	.645	6.30	0.63
12	10.43	.66	.685	7.14	0.71
13	11.14	.71	.725	8.08	0.81
14	11.88	.74	.765	9.09	0.91
15	12.67	.79	.815	10.32	1.03
16	13.51	.84	.865	11.69	1.17
17	14.40	.89	.910	13.10	1.31
18	15.33	.93	.960	14.71	1.47
19	16.32	.99	1.015	16.56	1.66
20	17.36	1.04	1.075	18.66	1.87
21	18.47	1.11	1.135	20.96	2.10
22	19.63	1.16	1.195	23.46	2.35
23	20.86	1.23	1.260	26.28	2.63
24	22.15	1.29	1.330	29.46	2.95
25	23.52	1.37	1.405	33.04	3.30
26	24.96	1.44	1.475	36.81	3.68
27	26.47	1.51	1.555	41.16	4.12
28	28.07	1.60	1.635	45.89	4.59
29	29.74	1.67	1.720	51.15	5.12
30	31.51	1.77	1.815	57.19	5.72
31	33.37	1.86	1.905	63.56	6.36
32	35.32	1.95	2.000	70.64	7.06
33	37.37	2.05	2.100	78.48	7.85
34	39.52	2.15	2.205	87.14	8.71
35	41.78	2.26	2.320	96.93	9.69
36	44.16	2.38	2.435	107.31	10.73
37	46.65	2.49	2.550	118.96	11.90
38	49.26	2.61	2.675	131.77	13.18
39	52.00	2.74	2.805	145.86	14.59
40	54.87	2.87	2.935	161.14	16.11
		3.00			

TABLE 6.—*The first term of the evaporation in a calm.*

$$E_1 = 0.100 \, \frac{e_s}{e_d} \, \frac{de}{dS}.$$

S \ e_d	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
0	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04
1	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04
2	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05
3	0.08	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06
4	0.09	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07
5	0.10	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.07	0.07
6	0.11	0.11	0.11	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.08
7	0.13	0.12	0.12	0.12	0.11	0.11	0.11	0.10	0.10	0.10	0.10
8	0.14	0.14	0.13	0.13	0.13	0.12	0.12	0.12	0.11	0.11	0.11
9	0.16	0.16	0.15	0.15	0.14	0.14	0.14	0.13	0.13	0.13	0.12
10	0.19	0.18	0.17	0.17	0.16	0.16	0.16	0.15	0.15	0.14	0.14
11	0.21	0.20	0.20	0.19	0.19	0.18	0.18	0.17	0.17	0.16	0.16
12	0.24	0.23	0.22	0.22	0.21	0.20	0.20	0.19	0.19	0.18	0.18
13	0.27	0.26	0.25	0.24	0.24	0.23	0.23	0.22	0.21	0.21	0.20
14	0.30	0.29	0.28	0.28	0.27	0.26	0.25	0.25	0.24	0.23	0.23
15	0.34	0.33	0.32	0.31	0.30	0.29	0.29	0.28	0.27	0.26	0.26
16	0.39	0.38	0.37	0.36	0.34	0.33	0.33	0.32	0.31	0.30	0.29
17	0.44	0.42	0.41	0.40	0.39	0.37	0.36	0.35	0.35	0.34	0.33
18	0.49	0.47	0.46	0.45	0.43	0.42	0.41	0.40	0.39	0.38	0.37
19	0.55	0.54	0.52	0.50	0.49	0.47	0.46	0.45	0.44	0.43	0.41
20	0.62	0.60	0.58	0.57	0.55	0.53	0.52	0.51	0.49	0.48	0.47
21	0.70	0.68	0.66	0.64	0.62	0.60	0.58	0.57	0.55	0.54	0.52
22	0.78	0.76	0.73	0.71	0.69	0.67	0.65	0.64	0.62	0.60	0.59
23	0.88	0.85	0.82	0.80	0.77	0.75	0.73	0.71	0.69	0.67	0.66
24	0.98	0.95	0.92	0.89	0.87	0.84	0.82	0.80	0.78	0.76	0.74
25	1.10	1.06	1.03	1.00	0.97	0.94	0.92	0.89	0.87	0.85	0.83
26	1.23	1.19	1.15	1.12	1.08	1.05	1.02	1.00	0.97	0.94	0.92
27	1.37	1.33	1.29	1.25	1.21	1.18	1.14	1.11	1.08	1.06	1.03
28	1.53	1.48	1.43	1.39	1.35	1.31	1.28	1.24	1.21	1.18	1.15
29	1.71	1.65	1.60	1.55	1.51	1.46	1.42	1.38	1.35	1.31	1.28
30	1.91	1.85	1.79	1.73	1.68	1.63	1.59	1.55	1.51	1.47	1.43
31	2.12	2.05	1.99	1.93	1.87	1.82	1.77	1.72	1.67	1.63	1.59
32	2.35	2.28	2.21	2.14	2.08	2.02	1.96	1.91	1.86	1.81	1.77
33	2.62	2.53	2.45	2.38	2.31	2.24	2.18	2.12	2.07	2.01	1.96
34	2.90	2.81	2.72	2.64	2.56	2.49	2.42	2.35	2.29	2.23	2.18
35	3.23	3.13	3.03	2.94	2.85	2.77	2.69	2.62	2.55	2.48	2.42
36	3.58	3.46	3.35	3.25	3.16	3.07	2.98	2.90	2.82	2.75	2.68
37	3.97	3.84	3.72	3.61	3.50	3.40	3.31	3.22	3.13	3.05	2.97
38	4.39	4.25	4.12	4.00	3.88	3.77	3.66	3.56	3.47	3.38	3.29
39	4.86	4.70	4.56	4.42	4.29	4.17	4.04	3.94	3.84	3.74	3.65
40	5.37	5.20	5.03	4.88	4.74	4.61	4.48	4.35	4.24	4.13	4.03

TABLE 6.—*The first term of the evaporation in a calm*—Continued.

$$E_1 = 0.100 \frac{e_s}{e_d} \frac{de}{dS}.$$

e_d	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
S 0	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03
1	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03
2	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04
3	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
4	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05
5	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06
6	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07
7	0.10	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.08
8	0.11	0.11	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09
9	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10
10	0.14	0.14	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.11	0.11
11	0.16	0.15	0.15	0.15	0.14	0.14	0.14	0.13	0.13	0.13	0.13
12	0.18	0.17	0.17	0.17	0.16	0.16	0.15	0.15	0.15	0.15	0.14
13	0.20	0.20	0.19	0.19	0.18	0.18	0.18	0.17	0.17	0.17	0.16
14	0.23	0.22	0.22	0.21	0.21	0.20	0.20	0.19	0.19	0.19	0.18
15	0.26	0.25	0.25	0.24	0.23	0.23	0.22	0.22	0.22	0.21	0.21
16	0.29	0.29	0.28	0.27	0.27	0.26	0.25	0.25	0.24	0.24	0.23
17	0.33	0.32	0.31	0.30	0.30	0.29	0.28	0.28	0.27	0.27	0.26
18	0.37	0.36	0.35	0.34	0.33	0.33	0.32	0.31	0.31	0.30	0.29
19	0.41	0.40	0.39	0.39	0.38	0.37	0.36	0.35	0.35	0.34	0.33
20	0.47	0.46	0.44	0.44	0.43	0.42	0.41	0.40	0.39	0.38	0.37
21	0.52	0.51	0.50	0.49	0.48	0.47	0.46	0.45	0.44	0.43	0.42
22	0.59	0.57	0.56	0.55	0.53	0.52	0.51	0.50	0.49	0.48	0.47
23	0.66	0.64	0.63	0.61	0.60	0.58	0.57	0.56	0.55	0.54	0.53
24	0.74	0.72	0.70	0.69	0.67	0.66	0.64	0.63	0.62	0.60	0.59
25	0.83	0.81	0.79	0.77	0.75	0.73	0.72	0.70	0.69	0.67	0.66
26	0.92	0.90	0.88	0.86	0.84	0.82	0.80	0.78	0.77	0.75	0.74
27	1.03	1.00	0.98	0.96	0.94	0.92	0.90	0.88	0.86	0.84	0.82
28	1.15	1.12	1.09	1.07	1.05	1.02	0.99	0.98	0.96	0.94	0.92
29	1.28	1.25	1.22	1.19	1.16	1.14	1.11	1.09	1.07	1.05	1.02
30	1.43	1.40	1.36	1.33	1.30	1.27	1.24	1.22	1.19	1.17	1.14
31	1.59	1.55	1.51	1.48	1.45	1.41	1.38	1.35	1.33	1.30	1.27
32	1.77	1.72	1.68	1.64	1.61	1.57	1.54	1.50	1.47	1.44	1.41
33	1.96	1.91	1.87	1.83	1.79	1.74	1.71	1.67	1.64	1.60	1.57
34	2.18	2.13	2.07	2.03	1.98	1.94	1.90	1.85	1.82	1.78	1.74
35	2.42	2.36	2.31	2.25	2.20	2.15	2.11	2.06	2.02	1.98	1.94
36	2.68	2.62	2.55	2.50	2.44	2.38	2.33	2.28	2.24	2.19	2.15
37	2.97	2.90	2.83	2.77	2.71	2.64	2.59	2.53	2.48	2.43	2.38
38	3.29	3.21	3.14	3.05	3.00	2.93	2.86	2.80	2.75	2.69	2.64
39	3.65	3.56	3.48	3.39	3.31	3.24	3.17	3.10	3.04	2.98	2.92
40	4.03	3.93	3.84	3.75	3.66	3.58	3.50	3.43	3.36	3.29	3.22

TABLE 6.—*The first term of the evaporation in a calm*—Continued.

$$E_1 = 0.100 \frac{e_s}{e_d} \frac{de}{dS}.$$

e_d		5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0
S	0	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	1	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	2	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03
	3	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	4	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04
	5	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	6	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
	7	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06
	8	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07
	9	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08
	10	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.09
	11	0.13	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11
	12	0.14	0.14	0.14	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.12
	13	0.16	0.16	0.16	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.13
	14	0.18	0.18	0.18	0.17	0.17	0.17	0.16	0.16	0.16	0.15	0.15
	15	0.21	0.20	0.20	0.19	0.19	0.19	0.18	0.18	0.18	0.17	0.17
	16	0.23	0.23	0.23	0.22	0.22	0.21	0.21	0.21	0.20	0.20	0.19
	17	0.26	0.26	0.25	0.25	0.24	0.24	0.23	0.23	0.23	0.22	0.22
	18	0.29	0.29	0.28	0.28	0.27	0.27	0.26	0.26	0.25	0.25	0.25
	19	0.33	0.33	0.32	0.31	0.31	0.30	0.30	0.29	0.29	0.28	0.28
	20	0.37	0.37	0.36	0.35	0.35	0.34	0.33	0.33	0.32	0.32	0.31
	21	0.42	0.41	0.40	0.40	0.39	0.38	0.37	0.37	0.36	0.36	0.35
	22	0.47	0.46	0.45	0.44	0.44	0.43	0.42	0.41	0.40	0.40	0.39
	23	0.53	0.52	0.51	0.50	0.49	0.48	0.47	0.46	0.45	0.45	0.44
	24	0.59	0.58	0.57	0.56	0.55	0.54	0.53	0.52	0.51	0.50	0.49
	25	0.66	0.65	0.64	0.62	0.61	0.60	0.59	0.58	0.57	0.56	0.55
	26	0.74	0.72	0.71	0.69	0.68	0.67	0.66	0.65	0.63	0.62	0.61
	27	0.82	0.81	0.79	0.78	0.76	0.75	0.74	0.72	0.71	0.70	0.69
	28	0.92	0.90	0.88	0.87	0.85	0.83	0.82	0.81	0.79	0.78	0.77
	29	1.02	1.00	0.99	0.97	0.95	0.93	0.91	0.90	0.88	0.87	0.85
	30	1.14	1.12	1.10	1.08	1.06	1.04	1.02	1.00	0.99	0.97	0.95
	31	1.27	1.24	1.22	1.20	1.18	1.16	1.14	1.12	1.10	1.08	1.06
	32	1.41	1.39	1.36	1.33	1.31	1.28	1.26	1.24	1.22	1.20	1.18
	33	1.57	1.54	1.51	1.48	1.45	1.43	1.40	1.38	1.36	1.33	1.31
	34	1.74	1.71	1.68	1.64	1.61	1.58	1.56	1.53	1.50	1.48	1.45
	35	1.94	1.90	1.86	1.83	1.80	1.76	1.73	1.70	1.67	1.64	1.62
	36	2.15	2.10	2.06	2.02	1.99	1.95	1.92	1.88	1.85	1.82	1.79
	37	2.38	2.33	2.29	2.25	2.20	2.16	2.12	2.09	2.06	2.02	1.98
	38	2.64	2.58	2.53	2.49	2.44	2.40	2.35	2.31	2.27	2.23	2.20
	39	2.92	2.86	2.80	2.75	2.70	2.65	2.60	2.56	2.52	2.47	2.43
	40	3.22	3.16	3.10	3.04	2.99	2.93	2.88	2.83	2.78	2.73	2.69

TABLE 6.—*The first term of the evaporation in a calm*—Continued.

$$E_1 = 0.100 \frac{e_s}{e_d} \frac{de}{dS}.$$

e_d	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0
S 0	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
1	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02
2	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
3	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03
4	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
5	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04
6	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
7	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05
8	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06
9	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07
10	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08
11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09
12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10
13	0.13	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12
14	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.13	0.13	0.13
15	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15
16	0.19	0.19	0.19	0.19	0.18	0.18	0.18	0.17	0.17	0.17	0.17
17	0.22	0.22	0.21	0.21	0.20	0.20	0.20	0.20	0.19	0.19	0.19
18	0.25	0.24	0.24	0.23	0.23	0.23	0.22	0.22	0.22	0.21	0.21
19	0.28	0.27	0.27	0.26	0.26	0.26	0.25	0.25	0.24	0.24	0.24
20	0.31	0.31	0.30	0.30	0.29	0.29	0.28	0.28	0.27	0.27	0.27
21	0.35	0.34	0.34	0.33	0.33	0.32	0.32	0.31	0.31	0.30	0.30
22	0.39	0.39	0.38	0.37	0.37	0.36	0.36	0.35	0.35	0.34	0.34
23	0.44	0.43	0.42	0.42	0.41	0.40	0.40	0.39	0.39	0.38	0.38
24	0.49	0.48	0.48	0.47	0.46	0.45	0.45	0.44	0.43	0.43	0.42
25	0.55	0.54	0.53	0.52	0.52	0.51	0.50	0.49	0.48	0.48	0.47
26	0.61	0.60	0.59	0.58	0.58	0.57	0.56	0.55	0.54	0.53	0.53
27	0.69	0.68	0.66	0.65	0.64	0.63	0.62	0.62	0.61	0.60	0.59
28	0.77	0.75	0.74	0.73	0.72	0.71	0.70	0.69	0.68	0.67	0.66
29	0.85	0.84	0.83	0.81	0.80	0.79	0.78	0.76	0.75	0.74	0.73
30	0.95	0.94	0.92	0.91	0.89	0.88	0.87	0.85	0.84	0.83	0.82
31	1.06	1.04	1.03	1.01	0.99	0.98	0.96	0.95	0.93	0.92	0.91
32	1.18	1.16	1.14	1.12	1.10	1.09	1.07	1.05	1.04	1.02	1.01
33	1.31	1.29	1.27	1.25	1.23	1.21	1.19	1.17	1.15	1.14	1.12
34	1.45	1.43	1.41	1.38	1.36	1.34	1.32	1.30	1.28	1.26	1.24
35	1.62	1.59	1.56	1.54	1.51	1.49	1.47	1.44	1.43	1.41	1.38
36	1.79	1.76	1.73	1.70	1.68	1.65	1.63	1.60	1.58	1.56	1.53
37	1.98	1.95	1.92	1.89	1.86	1.83	1.80	1.78	1.75	1.72	1.70
38	2.20	2.16	2.13	2.09	2.06	2.03	2.00	1.97	1.94	1.91	1.88
39	2.43	2.39	2.35	2.32	2.28	2.24	2.21	2.18	2.14	2.11	2.08
40	2.69	2.64	2.60	2.56	2.52	2.48	2.44	2.41	2.37	2.34	2.30

TABLE 6.—*The first term of the evaporation in a calm*—Continued.

$$E_1 = 0.100 \frac{e_s}{e_d} \frac{de}{dS}.$$

e_d / S	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0
0	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
1	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
2	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
3	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
4	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03
5	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
6	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04
7	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
8	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05
9	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06
10	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07
11	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.08
12	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09
13	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.10
14	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11
15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.13	0.13	0.13
16	0.17	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15
17	0.19	0.18	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.16
18	0.21	0.21	0.20	0.20	0.20	0.20	0.19	0.19	0.19	0.19	0.18
19	0.24	0.23	0.23	0.23	0.22	0.22	0.22	0.22	0.21	0.21	0.21
20	0.27	0.26	0.26	0.26	0.25	0.25	0.25	0.24	0.24	0.24	0.23
21	0.30	0.30	0.29	0.29	0.28	0.28	0.28	0.27	0.27	0.27	0.26
22	0.34	0.33	0.33	0.32	0.32	0.31	0.31	0.31	0.30	0.30	0.29
23	0.38	0.37	0.37	0.36	0.36	0.35	0.35	0.34	0.34	0.33	0.33
24	0.42	0.42	0.41	0.40	0.40	0.39	0.39	0.38	0.38	0.37	0.37
25	0.47	0.47	0.46	0.45	0.45	0.44	0.43	0.43	0.42	0.42	0.41
26	0.53	0.52	0.51	0.50	0.50	0.49	0.48	0.48	0.47	0.47	0.46
27	0.59	0.58	0.57	0.56	0.56	0.55	0.54	0.54	0.53	0.52	0.52
28	0.66	0.65	0.64	0.63	0.62	0.61	0.60	0.60	0.59	0.58	0.57
29	0.73	0.72	0.71	0.70	0.69	0.68	0.67	0.66	0.66	0.65	0.64
30	0.82	0.81	0.79	0.78	0.77	0.76	0.75	0.74	0.73	0.72	0.72
31	0.91	0.90	0.88	0.87	0.86	0.85	0.84	0.83	0.82	0.81	0.80
32	1.01	1.00	0.98	0.97	0.95	0.94	0.93	0.92	0.91	0.89	0.88
33	1.12	1.11	1.09	1.08	1.06	1.05	1.03	1.02	1.01	0.99	0.98
34	1.24	1.23	1.21	1.19	1.18	1.16	1.15	1.13	1.12	1.10	1.09
35	1.38	1.36	1.35	1.33	1.31	1.29	1.27	1.26	1.24	1.23	1.21
36	1.53	1.51	1.49	1.47	1.45	1.43	1.41	1.39	1.38	1.36	1.34
37	1.70	1.68	1.65	1.63	1.61	1.59	1.57	1.55	1.53	1.51	1.49
38	1.88	1.86	1.84	1.81	1.78	1.76	1.73	1.71	1.69	1.67	1.65
39	2.08	2.05	2.03	2.00	1.97	1.94	1.92	1.89	1.87	1.85	1.82
40	2.30	2.27	2.24	2.21	2.18	2.15	2.12	2.09	2.07	2.04	2.01

TABLE 6.—*The first term of the evaporation in a calm*—Continued.

$$E_1 = 0.100 \frac{e_s}{e_d} \frac{de}{dS}.$$

e_d	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0
S 0	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
1	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
2	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
3	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
4	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
5	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03
6	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
7	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04
8	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
9	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05
10	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06
11	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07
12	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.08
13	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09
14	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10
15	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11
16	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.13	0.13	0.13
17	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15
18	0.18	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.16
19	0.21	0.20	0.20	0.20	0.20	0.20	0.19	0.19	0.19	0.19	0.18
20	0.23	0.23	0.23	0.23	0.22	0.22	0.22	0.22	0.21	0.21	0.21
21	0.26	0.26	0.26	0.25	0.25	0.25	0.24	0.24	0.24	0.24	0.23
22	0.29	0.29	0.29	0.28	0.28	0.28	0.27	0.27	0.27	0.26	0.26
23	0.33	0.32	0.32	0.32	0.31	0.31	0.31	0.30	0.30	0.30	0.29
24	0.37	0.36	0.36	0.36	0.35	0.35	0.34	0.34	0.34	0.33	0.33
25	0.41	0.41	0.40	0.40	0.39	0.39	0.38	0.38	0.38	0.37	0.37
26	0.46	0.45	0.45	0.44	0.44	0.43	0.43	0.42	0.42	0.41	0.41
27	0.52	0.51	0.50	0.50	0.49	0.48	0.48	0.47	0.47	0.46	0.46
28	0.57	0.57	0.56	0.55	0.55	0.54	0.53	0.53	0.52	0.52	0.51
29	0.64	0.63	0.62	0.62	0.61	0.60	0.60	0.59	0.58	0.58	0.57
30	0.72	0.71	0.70	0.69	0.68	0.68	0.67	0.66	0.65	0.64	0.64
31	0.80	0.79	0.77	0.77	0.76	0.75	0.74	0.73	0.72	0.71	0.71
32	0.88	0.87	0.86	0.86	0.84	0.83	0.82	0.81	0.80	0.79	0.78
33	0.98	0.97	0.96	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.87
34	1.09	1.07	1.06	1.05	1.04	1.03	1.01	1.00	0.99	0.98	0.97
35	1.21	1.20	1.18	1.17	1.15	1.14	1.13	1.11	1.10	1.09	1.08
36	1.34	1.32	1.31	1.29	1.28	1.26	1.25	1.23	1.22	1.21	1.19
37	1.49	1.47	1.45	1.43	1.42	1.40	1.38	1.37	1.35	1.34	1.32
38	1.65	1.63	1.61	1.59	1.57	1.55	1.53	1.51	1.50	1.48	1.46
39	1.82	1.80	1.78	1.76	1.74	1.72	1.70	1.68	1.66	1.64	1.62
40	2.01	1.99	1.96	1.94	1.92	1.90	1.87	1.85	1.83	1.81	1.79

TABLE 6.—*The first term of the evaporation in a calm*—Continued.

$$E_1 = 0.100 \frac{e_s}{e_d} \frac{de}{dS}.$$

e_d	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10.0
S 0	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
1	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
2	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
3	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02
4	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
5	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
6	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03
7	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
8	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04
9	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
10	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
11	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06
12	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07
13	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08
14	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09
15	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10
16	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12
17	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.13	0.13
18	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15
19	0.18	0.18	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.17
20	0.21	0.21	0.20	0.20	0.20	0.20	0.19	0.19	0.19	0.19	0.19
21	0.23	0.23	0.23	0.23	0.22	0.22	0.22	0.22	0.21	0.21	0.21
22	0.26	0.26	0.26	0.25	0.25	0.25	0.24	0.24	0.24	0.24	0.24
23	0.29	0.29	0.29	0.28	0.28	0.28	0.27	0.27	0.27	0.26	0.26
24	0.33	0.32	0.32	0.32	0.31	0.31	0.31	0.30	0.30	0.30	0.30
25	0.37	0.36	0.36	0.36	0.35	0.35	0.34	0.34	0.34	0.33	0.33
26	0.41	0.40	0.40	0.40	0.39	0.39	0.38	0.38	0.38	0.37	0.37
27	0.46	0.45	0.45	0.44	0.44	0.43	0.43	0.42	0.42	0.41	0.41
28	0.51	0.50	0.50	0.49	0.49	0.48	0.48	0.47	0.47	0.46	0.46
29	0.57	0.56	0.56	0.55	0.54	0.54	0.53	0.53	0.52	0.51	0.51
30	0.64	0.63	0.62	0.62	0.61	0.60	0.60	0.59	0.58	0.57	0.57
31	0.71	0.70	0.69	0.68	0.68	0.67	0.66	0.66	0.65	0.64	0.64
32	0.78	0 78	0.77	0.76	0.75	0.74	0.74	0.73	0.72	0.71	0.71
33	0.87	0.86	0.85	0.84	0.84	0.83	0.82	0.81	0.80	0.79	0.79
34	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87
35	1.08	1.07	1.06	1.04	1.03	1.02	1.01	1.00	0.99	0.98	0.97
36	1.19	1.18	1.17	1.15	1.14	1.13	1.12	1.11	1.10	1.08	1.07
37	1.32	1.31	1.29	1.28	1.27	1.25	1.24	1.23	1.21	1.20	1.19
38	1.46	1.45	1.43	1.42	1.40	1.39	1.37	1.36	1.34	1.33	1.32
39	1.62	1.60	1.58	1.57	1.55	1.54	1.52	1.51	1.49	1.47	1.46
40	1.79	1.77	1.75	1.73	1.71	1.70	1.68	1.66	1.64	1.63	1.61

TABLE 6.—*The first term of the evaporation in a calm*—Continued.

$$E_1 = 0.100 \frac{e_s}{e_d} \frac{de}{dS}.$$

e_d	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	11.0
S 0	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
1	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
2	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
3	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
4	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02
5	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
6	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
7	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03
8	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
9	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04
10	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
11	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
12	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06
13	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07
14	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08
15	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09
16	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
17	0.13	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12
18	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.13
19	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.15
20	0.19	0.19	0.18	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.17
21	0.21	0.21	0.21	0.20	0.20	0.20	0.20	0.20	0.19	0.19	0.19
22	0.23	0.23	0.23	0.23	0.23	0.22	0.22	0.22	0.22	0.22	0.21
23	0.26	0.26	0.26	0.26	0.25	0.25	0.25	0.25	0.24	0.24	0.24
24	0.29	0.29	0.29	0.29	0.28	0.28	0.28	0.28	0.27	0.27	0.27
25	0.33	0.33	0.32	0.32	0.32	0.31	0.31	0.31	0.31	0.30	0.30
26	0.37	0.36	0.36	0.36	0.35	0.35	0.35	0.34	0.34	0.34	0.33
27	0.41	0.41	0.40	0.40	0.40	0.39	0.39	0.39	0.38	0.38	0.37
28	0.46	0.45	0.45	0.45	0.44	0.44	0.43	0.43	0.43	0.42	0.42
29	0.51	0.51	0.50	0.50	0.49	0.49	0.48	0.48	0.47	0.47	0.47
30	0.57	0.57	0.56	0.56	0.55	0.54	0.54	0.53	0.53	0.52	0.52
31	0.64	0.63	0.62	0.62	0.61	0.61	0.60	0.59	0.59	0.58	0.58
32	0.71	0.70	0.69	0.69	0.68	0.67	0.67	0.66	0.65	0.65	0.64
33	0.78	0.78	0.77	0.76	0.75	0.75	0.74	0.73	0.73	0.72	0.71
34	0.87	0.86	0.85	0.85	0.84	0.83	0.82	0.81	0.81	0.80	0.79
35	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
36	1.07	1.06	1.05	1.04	1.03	1.02	1.01	1.00	0.99	0.98	0.98
37	1.19	1.18	1.17	1.16	1.14	1.13	1.12	1.11	1.10	1.09	1.08
38	1.32	1.30	1.29	1.28	1.27	1.26	1.24	1.23	1.22	1.21	1.20
39	1.46	1.44	1.43	1.42	1.40	1.39	1.38	1.36	1.35	1.34	1.32
40	1.61	1.60	1.58	1.56	1.55	1.53	1.52	1.51	1.49	1.48	1.46

TABLE 6.—*The first term of the evaporation in a calm*—Continued.

$$E_1 = 0.100 \frac{e_s}{e_d} \frac{de}{dS}.$$

e_d	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	12.0
S 0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
1	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
2	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
3	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
4	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
5	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02
6	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
7	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
8	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
9	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
10	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
11	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05
12	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
13	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
14	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
15	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
16	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
17	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11
18	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.12	0.12	0.12
19	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14
20	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16
21	0.19	0.19	0.19	0.19	0.18	0.18	0.18	0.18	0.18	0.18	0.18
22	0.21	0.21	0.21	0.21	0.21	0.20	0.20	0.20	0.20	0.20	0.20
23	0.24	0.24	0.23	0.23	0.23	0.23	0.23	0.22	0.22	0.22	0.22
24	0.27	0.27	0.26	0.26	0.26	0.26	0.25	0.25	0.25	0.25	0.25
25	0.30	0.30	0.29	0.29	0.29	0.29	0.28	0.28	0.28	0.28	0.28
26	0.33	0.33	0.33	0.33	0.32	0.32	0.32	0.31	0.31	0.31	0.31
27	0.37	0.37	0.37	0.36	0.36	0.36	0.36	0.35	0.35	0.35	0.34
28	0.42	0.41	0.41	0.41	0.40	0.40	0.40	0.39	0.39	0.39	0.38
29	0.47	0.46	0.46	0.45	0.45	0.45	0.44	0.44	0.43	0.43	0.43
30	0.52	0.52	0.51	0.51	0.50	0.50	0.49	0.49	0.48	0.48	0.48
31	0.58	0.57	0.57	0.56	0.56	0.55	0.55	0.54	0.54	0.53	0.53
32	0.64	0.64	0.63	0.62	0.62	0.61	0.61	0.60	0.60	0.59	0.59
33	0.71	0.71	0.70	0.69	0.69	0.68	0.68	0.67	0.67	0.66	0.65
34	0.79	0.78	0.78	0.77	0.76	0.76	0.75	0.74	0.74	0.73	0.73
35	0.88	0.87	0.87	0.86	0.85	0.84	0.84	0.83	0.82	0.81	0.81
36	0.98	0.97	0.96	0.95	0.94	0.93	0.93	0.92	0.91	0.90	0.89
37	1.08	1.07	1.06	1.05	1.04	1.03	1.03	1.02	1.01	1.00	0.99
38	1.20	1.19	1.18	1.17	1.16	1.15	1.14	1.13	1.12	1.11	1.10
39	1.32	1.31	1.30	1.29	1.28	1.27	1.26	1.25	1.24	1.23	1.22
40	1.46	1.45	1.44	1.43	1.41	1.40	1.39	1.38	1.37	1.35	1.34

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TABLE 6.—*The first term of the evaporation in a calm*—Continued.

$$E_1 = 0.100\ \frac{e_s}{e_d}\frac{de}{dS}.$$

	e_d	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	13.0
S	0	0. 01	0. 01	0. 01	0. 01	0. 01	0. 01	0. 01	0. 01	0. 01	0. 01	0. 01
	1	0. 01	0. 01	0. 01	0. 01	0. 01	0. 01	0. 01	0. 01	0. 01	0. 01	0. 01
	2	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02
	3	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02
	4	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02
	5	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02	0. 02
	6	0. 03	0. 03	0. 03	0. 03	0. 03	0. 03	0. 03	0. 03	0. 03	0. 03	0. 03
	7	0. 03	0. 03	0. 03	0. 03	0. 03	0. 03	0. 03	0. 03	0. 03	0. 03	0. 03
	8	0. 04	0. 04	0. 04	0. 03	0. 03	0. 03	0. 03	0. 03	0. 03	0. 03	0. 03
	9	0. 04	0. 04	0. 04	0. 04	0. 04	0. 04	0. 04	0. 04	0. 04	0. 04	0. 04
	10	0. 05	0. 05	0. 05	0. 05	0. 05	0. 04	0. 04	0. 04	0. 04	0. 04	0. 04
	11	0. 05	0. 05	0. 05	0. 05	0. 05	0. 05	0. 05	0. 05	0. 05	0. 05	0. 05
	12	0. 06	0. 06	0. 06	0. 06	0. 06	0. 06	0. 06	0. 06	0. 06	0. 06	0. 05
	13	0. 07	0. 07	0. 07	0. 07	0. 07	0. 06	0. 06	0. 06	0. 06	0. 06	0. 06
	14	0. 08	0. 08	0. 07	0. 07	0. 07	0. 07	0. 07	0. 07	0. 07	0. 07	0. 07
	15	0. 09	0. 09	0. 08	0. 08	0. 08	0. 08	0. 08	0. 08	0. 08	0. 08	0. 08
	16	0. 10	0. 10	0. 10	0. 10	0. 09	0. 09	0. 09	0. 09	0. 09	0. 09	0. 09
	17	0. 11	0. 11	0. 11	0. 11	0. 11	0. 10	0. 10	0. 10	0. 10	0. 10	0. 10
	18	0. 12	0. 12	0. 12	0. 12	0. 12	0. 12	0. 12	0. 12	0. 11	0. 11	0. 11
	19	0. 14	0. 14	0. 14	0. 13	0. 13	0. 13	0. 13	0. 13	0. 13	0. 13	0. 13
	20	0. 16	0. 15	0. 15	0. 15	0. 15	0. 15	0. 15	0. 15	0. 15	0. 14	0. 14
	21	0. 18	0. 17	0. 17	0. 17	0. 17	0. 17	0. 17	0. 17	0. 16	0. 16	0. 16
	22	0. 20	0. 19	0. 19	0. 19	0. 19	0. 19	0. 19	0. 19	0. 18	0. 18	0. 18
	23	0. 22	0. 22	0. 22	0. 21	0. 21	0. 21	0. 21	0. 21	0. 21	0. 20	0. 20
	24	0. 25	0. 24	0. 24	0. 24	0. 24	0. 24	0. 23	0. 23	0. 23	0. 23	0. 23
	25	0. 28	0. 27	0. 27	0. 27	0. 27	0. 26	0. 26	0. 26	0. 26	0. 26	0. 25
	26	0. 31	0. 30	0. 30	0. 30	0. 30	0. 29	0. 29	0. 29	0. 29	0. 29	0. 28
	27	0. 34	0. 34	0. 34	0. 33	0. 33	0. 33	0. 33	0. 32	0. 32	0. 32	0. 32
	28	0. 38	0. 38	0. 38	0. 37	0. 37	0. 37	0. 36	0. 36	0. 36	0. 36	0. 35
	29	0. 43	0. 42	0. 42	0. 42	0. 41	0. 41	0. 41	0. 40	0. 40	0. 40	0. 39
	30	0. 48	0. 47	0. 47	0. 47	0. 46	0. 46	0. 45	0. 45	0. 45	0. 44	0. 44
	31	0. 53	0. 53	0. 52	0. 52	0. 51	0. 51	0. 50	0. 50	0. 50	0. 49	0. 49
	32	0. 59	0. 58	0. 58	0. 57	0. 57	0. 56	0. 56	0. 56	0. 55	0. 55	0. 54
	33	0. 65	0. 65	0. 64	0. 64	0. 63	0. 63	0. 62	0. 62	0. 61	0. 61	0. 60
	34	0. 73	0. 72	0. 71	0. 71	0. 70	0. 70	0. 69	0. 69	0. 68	0. 68	0. 67
	35	0. 81	0. 80	0. 79	0. 79	0. 78	0. 78	0. 77	0. 76	0. 76	0. 75	0. 75
	36	0. 89	0. 89	0. 88	0. 87	0. 87	0. 86	0. 85	0. 84	0. 84	0. 83	0. 83
	37	0. 99	0. 98	0. 98	0. 97	0. 96	0. 95	0. 94	0. 94	0. 93	0. 92	0. 92
	38	1. 10	1. 09	1. 08	1. 07	1. 06	1. 05	1. 05	1. 04	1. 03	1. 02	1. 01
	39	1. 22	1. 21	1. 20	1. 19	1. 18	1. 17	1. 16	1. 15	1. 14	1. 13	1. 12
	40	1. 34	1. 33	1. 32	1. 31	1. 30	1. 29	1. 28	1. 27	1. 26	1. 25	1. 24

TABLE 6.—*The first term of the evaporation in a calm*—Continued.

$$E_1=0.100\ \frac{e_s}{e_d}\frac{d\epsilon}{dS}.$$

e_d	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	14.0
S 0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
2	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
3	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
4	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
5	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
6	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02
7	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
8	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
9	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
10	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
12	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
13	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
14	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
15	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07
16	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08
17	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09
18	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
19	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
20	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.13
21	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15
22	0.18	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.17
23	0.20	0.20	0.20	0.20	0.20	0.19	0.19	0.19	0.19	0.19	0.19
24	0.23	0.23	0.22	0.22	0.22	0.22	0.22	0.22	0.21	0.21	0.21
25	0.25	0.25	0.25	0.25	0.25	0.24	0.24	0.24	0.24	0.24	0.24
26	0.28	0.28	0.28	0.28	0.27	0.27	0.27	0.27	0.27	0.26	0.26
27	0.32	0.31	0.31	0.31	0.31	0.31	0.30	0.30	0.30	0.30	0.29
28	0.35	0.35	0.35	0.34	0.34	0.34	0.34	0.34	0.33	0.33	0.33
29	0.39	0.39	0.39	0.38	0.38	0.38	0.38	0.37	0.37	0.37	0.37
30	0.44	0.44	0.43	0.43	0.43	0.42	0.42	0.42	0.41	0.41	0.41
31	0.49	0.49	0.48	0.48	0.47	0.47	0.47	0.46	0.46	0.46	0.45
32	0.54	0.54	0.53	0.53	0.53	0.52	0.52	0.52	0.51	0.51	0.50
33	0.60	0.60	0.59	0.59	0.59	0.58	0.58	0.57	0.57	0.56	0.56
34	0.67	0.66	0.66	0.65	0.65	0.65	0.64	0.64	0.63	0.63	0.62
35	0.75	0.74	0.73	0.73	0.72	0.72	0.71	0.71	0.70	0.70	0.69
36	0.83	0.82	0.81	0.81	0.80	0.79	0.79	0.78	0.78	0.77	0.77
37	0.92	0.91	0.90	0.89	0.89	0.88	0.88	0.87	0.86	0.86	0.85
38	1.01	1.01	1.00	0.99	0.98	0.98	0.97	0.96	0.96	0.95	0.94
39	1.12	1.11	1.11	1.10	1.09	1.08	1.07	1.06	1.06	1.05	1.04
40	1.24	1.23	1.22	1.21	1.20	1.19	1.18	1.18	1.17	1.16	1.15

TABLE 6.—*The first term of the evaporation in a calm*—Continued.

$$E_1 = 0.100 \frac{e_s}{e_d} \frac{de}{dS}.$$

e_d	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	15.0
S 0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
2	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
3	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
4	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
5	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
6	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
7	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
8	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
9	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
10	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
12	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
13	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05
14	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
15	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
16	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
17	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
18	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
19	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11
20	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.12
21	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	01.4	0.14
22	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
23	0.19	0.19	0.19	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
24	0.21	0.21	0.21	0.21	0.20	0.20	0.20	0.20	0.20	0.20	0.20
25	0.24	0.23	0.23	0.23	0.23	0.23	0.23	0.22	0.22	0.22	0.22
26	0.26	0.26	0.26	0.26	0.26	0.25	0.25	0.25	0.25	0.25	0.25
27	0.29	0.29	0.29	0.29	0.29	0.28	0.28	0.28	0.28	0.28	0.27
28	0.33	0.33	0.32	0.32	0.32	0.32	0.31	0.31	0.31	0.31	0.31
29	0.37	0.36	0.36	0.36	0.36	0.35	0.35	0.35	0.35	0.34	0.34
30	0.41	0.41	0.40	0.40	0.40	0.39	0.39	0.39	0.39	0.38	0.38
31	0.45	0.45	0.45	0.44	0.44	0.44	0.44	0.43	0.43	0.43	0.42
32	0.50	0.50	0.50	0.49	0.49	0.49	0.48	0.48	0.48	0.47	0.47
33	0.56	0.56	0.55	0.55	0.55	0.54	0.54	0.53	0.53	0.53	0.52
34	0.62	0.62	0.61	0.61	0.60	0.60	0.60	0.59	0.59	0.58	0.58
35	0.69	0.69	0.68	0.68	0.67	0.67	0.66	0.66	0.65	0.65	0.65
36	0.77	0.76	0.76	0.75	0.75	0.74	0.73	0.73	0.73	0.72	0.72
37	0.85	0.84	0.84	0.83	0.83	0.82	0.82	0.81	0.80	0.80	0.79
38	0.94	0.93	0.93	0.92	0.92	0.91	0.90	0.90	0.89	0.88	0.88
39	1.04	1.03	1.03	1.02	1.01	1.01	1.00	0.99	0.99	0.98	0.97
40	1.15	1.14	1.13	1.13	1.12	1.11	1.10	1.10	1.09	1.08	1.07

TABLE 6.—*The first term of the evaporation in a calm*—Continued.

$$E_1 = 0.100 \frac{e_s}{e_d} \frac{de}{dS}.$$

e_d	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	16.0
S 0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
2	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
3	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
4	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
5	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
6	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
7	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
8	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
9	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
10	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
12	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04
13	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
14	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
15	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06
16	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07
17	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.08
18	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.09
19	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10
20	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
21	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.13	0.13	0.13	0.13
22	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
23	0.18	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16
24	0.20	0.20	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.18
25	0.22	0.22	0.22	0.22	0.21	0.21	0.21	0.21	0.21	0.21	0.21
26	0.25	0.24	0.24	0.24	0.24	0.24	0.24	0.23	0.23	0.23	0.23
27	0.27	0.27	0.27	0.27	0.27	0.27	0.26	0.26	0.26	0.26	0.26
28	0.31	0.30	0.30	0.30	0.30	0.30	0.29	0.29	0.29	0.29	0.29
29	0.34	0.34	0.34	0.33	0.33	0.33	0.33	0.33	0.32	0.32	0.32
30	0.38	0.38	0.38	0.37	0.37	0.37	0.37	0.36	0.36	0.36	0.36
31	0.42	0.42	0.42	0.42	0.41	0.41	0.41	0.41	0.40	0.40	0.40
32	0.47	0.47	0.46	0.46	0.46	0.46	0.45	0.45	0.45	0.44	0.44
33	0.52	0.52	0.52	0.51	0.51	0.51	0.50	0.50	0.50	0.49	0.49
34	0.58	0.58	0.57	0.57	0.57	0.56	0.56	0.55	0.55	0.55	0.54
35	0.65	0.64	0.64	0.63	0.63	0.63	0.62	0.62	0.61	0.61	0.61
36	0.72	0.71	0.71	0.70	0.70	0.69	0.69	0.68	0.68	0.67	0.67
37	0.79	0.79	0.78	0.78	0.77	0.77	0.76	0.76	0.75	0.75	0.74
38	0.88	0.87	0.87	0.86	0.86	0.85	0.84	0.84	0.83	0.83	0.82
39	0.97	0.97	0.96	0.95	0.95	0.94	0.94	0.93	0.92	0.92	0.91
40	1.07	1.07	1.06	1.05	1.05	1.04	1.03	1.03	1.02	1.01	1.01

TABLE 6.—*The first term of the evaporation in a calm*—Continued.

$$E_1 = 0.100 \frac{e_s}{e_d} \frac{de}{dS}.$$

e_d	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	17.0
S 0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
2	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
3	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
4	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
5	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
6	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
7	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
8	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
9	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
10	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
11	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
12	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
13	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
14	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05
15	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
16	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
17	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
18	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
19	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
20	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
21	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.12	0.12
22	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
23	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.15
24	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.17	0.17
25	0.21	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.19
26	0.23	0.23	0.23	0.23	0.22	0.22	0.22	0.22	0.22	0.22	0.22
27	0.26	0.26	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.24	0.24
28	0.29	0.29	0.28	0.28	0.28	0.28	0.28	0.27	0.27	0.27	0.27
29	0.32	0.32	0.32	0.31	0.31	0.31	0.31	0.31	0.30	0.30	0.30
30	0.36	0.36	0.35	0.35	0.35	0.35	0.34	0.34	0.34	0.34	0.34
31	0.40	0.40	0.39	0.39	0.39	0.39	0.38	0.38	0.38	0.38	0.37
32	0.44	0.44	0.44	0.43	0.43	0.43	0.43	0.42	0.42	0.42	0.42
33	0.49	0.49	0.48	0.48	0.48	0.48	0.47	0.47	0.47	0.46	0.46
34	0.54	0.54	0.54	0.53	0.53	0.53	0.53	0.52	0.52	0.52	0.51
35	0.61	0.60	0.60	0.59	0.59	0.59	0.58	0.58	0.58	0.57	0.57
36	0.67	0.67	0.66	0.66	0.65	0.65	0.65	0.64	0.64	0.63	0.63
37	0.74	0.74	0.73	0.73	0.73	0.72	0.72	0.71	0.71	0.70	0.70
38	0.82	0.82	0.81	0.81	0.80	0.80	0.79	0.79	0.78	0.78	0.78
39	0.91	0.91	0.90	0.90	0.89	0.88	0.88	0.87	0.87	0.86	0.86
40	1.01	1.00	0.99	0.99	0.98	0.98	0.97	0.96	0.96	0.95	0.95

TABLE 6.—*The first term of the evaporation in a calm*—Continued.

$$E_1 = 0.100 \frac{e_s}{e_d} \frac{de}{dS}.$$

e_d	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	18.0
S 0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
2	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
3	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
4	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
5	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
6	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
7	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
8	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
9	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
10	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
11	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
12	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
13	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
14	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
15	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
16	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
17	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07
18	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
19	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.09
20	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10
21	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
22	0.14	0.14	0.14	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.13
23	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
24	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16
25	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.18	0.18
26	0.22	0.22	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.20
27	0.24	0.24	0.24	0.24	0.24	0.24	0.23	0.23	0.23	0.23	0.23
28	0.27	0.27	0.27	0.27	0.26	0.26	0.26	0.26	0.26	0.26	0.26
29	0.30	0.30	0.30	0.30	0.29	0.29	0.29	0.29	0.29	0.29	0.28
30	0.34	0.34	0.33	0.33	0.33	0.33	0.33	0.32	0.32	0.32	0.32
31	0.37	0.37	0.37	0.37	0.37	0.36	0.36	0.36	0.36	0.36	0.35
32	0.42	0.41	0.41	0.41	0.41	0.40	0.40	0.40	0.40	0.39	0.39
33	0.46	0.46	0.46	0.45	0.45	0.45	0.45	0.44	0.44	0.44	0.44
34	0.51	0.51	0.51	0.50	0.50	0.50	0.49	0.49	0.49	0.49	0.48
35	0.57	0.57	0.56	0.56	0.56	0.55	0.55	0.55	0.54	0.54	0.54
36	0.63	0.63	0.62	0.62	0.62	0.61	0.61	0.61	0.60	0.60	0.60
37	0.70	0.70	0.69	0.69	0.68	0.68	0.68	0.67	0.67	0.66	0.66
38	0.78	0.77	0.77	0.76	0.76	0.75	0.75	0.74	0.74	0.74	0.73
39	0.86	0.85	0.85	0.84	0.84	0.83	0.83	0.82	0.82	0.82	0.81
40	0.95	0.94	0.94	0.93	0.93	0.92	0.92	0.91	0.91	0.90	0.90

TABLE 6.—*The first term of the evaporation in a calm*—Continued.

$$E_1 = 0.100 \frac{e_s}{e_d} \frac{de}{dS}.$$

e_d	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	19.0
S 0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
2	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
3	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
4	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
5	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
6	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
7	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
8	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
9	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
10	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
11	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
12	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
13	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
14	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
15	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05
16	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
17	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
18	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
19	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
20	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
21	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
22	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.12	0.12
23	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
24	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
25	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.17	0.17
26	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.19	0.19
27	0.23	0.23	0.23	0.23	0.22	0.22	0.22	0.22	0.22	0.22	0.22
28	0.26	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.24	0.24	0.24
29	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.27	0.27	0.27	0.27
30	0.32	0.32	0.31	0.31	0.31	0.31	0.31	0.31	0.30	0.30	0.30
31	0.35	0.35	0.35	0.35	0.35	0.34	0.34	0.34	0.34	0.34	0.33
32	0.39	0.39	0.39	0.39	0.38	0.38	0.38	0.38	0.38	0.37	0.37
33	0.44	0.43	0.43	0.43	0.43	0.42	0.42	0.42	0.42	0.42	0.41
34	0.48	0.48	0.48	0.48	0.47	0.47	0.47	0.47	0.46	0.46	0.46
35	0.54	0.54	0.53	0.53	0.53	0.52	0.52	0.52	0.52	0.51	0.51
36	0.60	0.59	0.59	0.59	0.58	0.58	0.58	0.57	0.57	0.57	0.56
37	0.66	0.66	0.65	0.65	0.65	0.64	0.64	0.64	0.63	0.63	0.63
38	0.73	0.73	0.72	0.72	0.72	0.71	0.71	0.70	0.70	0.70	0.69
39	0.81	0.81	0.80	0.80	0.79	0.79	0.78	0.78	0.78	0.77	0.77
40	0.90	0.89	0.89	0.88	0.88	0.87	0.87	0.86	0.86	0.85	0.85

TABLE 6.—*The first term of the evaporation in a calm*—Continued.

$$E_1 = 0.100 \frac{e_s}{e_d} \frac{de}{dS}.$$

e_d	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	20.0
S 0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
2	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
3	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
4	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
5	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
6	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
7	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
8	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
9	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02
10	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
11	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
12	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
13	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
14	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
15	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
16	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
17	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
18	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07
19	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08
20	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09
21	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
22	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
23	0.14	0.14	0.14	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.13
24	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
25	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
26	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.18	0.18
27	0.22	0.22	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
28	0.24	0.24	0.24	0.24	0.24	0.24	0.23	0.23	0.23	0.23	0.23
29	0.27	0.27	0.27	0.27	0.26	0.26	0.26	0.26	0.26	0.26	0.26
30	0.30	0.30	0.30	0.30	0.29	0.29	0.29	0.29	0.29	0.29	0.29
31	0.33	0.33	0.33	0.33	0.33	0.33	0.32	0.32	0.32	0.32	0.32
32	0.37	0.37	0.37	0.37	0.36	0.36	0.36	0.36	0.36	0.35	0.35
33	0.41	0.41	0.41	0.41	0.40	0.40	0.40	0.40	0.40	0.39	0.39
34	0.46	0.46	0.45	0.45	0.45	0.45	0.44	0.44	0.44	0.44	0.44
35	0.51	0.51	0.50	0.50	0.50	0.50	0.49	0.49	0.49	0.49	0.48
36	0.56	0.56	0.56	0.56	0.55	0.55	0.55	0.54	0.54	0.54	0.54
37	0.63	0.62	0.62	0.62	0.61	0.61	0.61	0.60	0.60	0.60	0.60
38	0.69	0.69	0.69	0.68	0.68	0.68	0.67	0.67	0.67	0.66	0.66
39	0.77	0.76	0.76	0.76	0.75	0.75	0.74	0.74	0.74	0.73	0.73
40	0.85	0.84	0.84	0.83	0.83	0.83	0.82	0.82	0.81	0.81	0.81

TABLE 7.—*The second term of the evaporation for the wind effect.*

$E_2 = E_1\ 0.0175\ w.$

E_1	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
w 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02
2	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.04
3	0.00	0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.05
4	0.00	0.01	0.01	0.02	0.03	0.04	0.04	0.05	0.06	0.06	0.07
5	0.00	0.01	0.02	0.03	0.04	0.04	0.05	0.06	0.07	0.08	0.09
6	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.11
7	0.00	0.01	0.02	0.04	0.05	0.06	0.07	0.09	0.10	0.11	0.12
8	0.00	0.01	0.03	0.04	0.06	0.07	0.08	0.10	0.11	0.13	0.14
9	0.00	0.02	0.03	0.05	0.06	0.08	0.09	0.11	0.13	0.14	0.16
10	0.00	0.02	0.04	0.05	0.07	0.09	0.11	0.12	0.14	0.16	0.18
11	0.00	0.02	0.04	0.06	0.08	0.10	0.12	0.14	0.15	0.17	0.19
12	0.00	0.02	0.04	0.06	0.08	0.11	0.13	0.15	0.17	0.19	0.21
13	0.00	0.02	0.05	0.07	0.09	0.11	0.14	0.16	0.18	0.21	0.23
14	0.00	0.03	0.05	0.07	0.10	0.12	0.15	0.17	0.20	0.22	0.25
15	0.00	0.03	0.05	0.08	0.11	0.13	0.16	0.18	0.21	0.24	0.26
16	0.00	0.03	0.06	0.08	0.11	0.14	0.17	0.20	0.22	0.25	0.28
17	0.00	0.03	0.06	0.09	0.12	0.15	0.18	0.21	0.24	0.27	0.30
18	0.00	0.03	0.06	0.09	0.13	0.16	0.19	0.22	0.25	0.28	0.32
19	0.00	0.03	0.07	0.10	0.13	0.17	0.20	0.23	0.27	0.30	0.33
20	0.00	0.04	0.07	0.11	0.14	0.18	0.21	0.25	0.28	0.32	0.35
21	0.00	0.04	0.07	0.11	0.15	0.18	0.22	0.26	0.29	0.33	0.37
22	0.00	0.04	0.08	0.12	0.15	0.19	0.23	0.27	0.31	0.35	0.39
23	0.00	0.04	0.08	0.12	0.16	0.20	0.24	0.28	0.32	0.36	0.40
24	0.00	0.04	0.08	0.13	0.17	0.21	0.25	0.30	0.34	0.38	0.42
25	0.00	0.05	0.09	0.13	0.18	0.22	0.26	0.31	0.35	0.40	0.44
26	0.00	0.05	0.09	0.14	0.18	0.23	0.27	0.32	0.36	0.41	0.46
27	0.00	0.05	0.10	0.14	0.19	0.24	0.28	0.33	0.38	0.43	0.47
28	0.00	0.05	0.10	0.15	0.20	0.25	0.29	0.34	0.39	0.44	0.49
29	0.00	0.05	0.10	0.15	0.20	0.25	0.30	0.36	0.41	0.46	0.51
30	0.00	0.05	0.11	0.16	0.21	0.26	0.32	0.37	0.42	0.47	0.53
31	0.00	0.06	0.11	0.16	0.22	0.27	0.33	0.38	0.43	0.49	0.54
32	0.00	0.06	0.11	0.17	0.22	0.28	0.34	0.39	0.45	0.51	0.56
33	0.00	0.06	0.12	0.17	0.23	0.29	0.35	0.41	0.46	0.52	0.58
34	0.00	0.06	0.12	0.18	0.24	0.30	0.36	0.42	0.48	0.54	0.60
35	0.00	0.06	0.12	0.18	0.25	0.31	0.37	0.43	0.49	0.55	0.61
36	0.00	0.06	0.13	0.19	0.25	0.32	0.38	0.44	0.50	0.57	0.63
37	0.00	0.07	0.13	0.19	0.26	0.32	0.39	0.46	0.52	0.58	0.65
38	0.00	0.07	0.13	0.20	0.27	0.33	0.40	0.47	0.53	0.60	0.67
39	0.00	0.07	0.14	0.20	0.27	0.34	0.41	0.48	0.55	0.62	0.68
40	0.00	0.07	0.14	0.21	0.28	0.35	0.42	0.49	0.56	0.63	0.70